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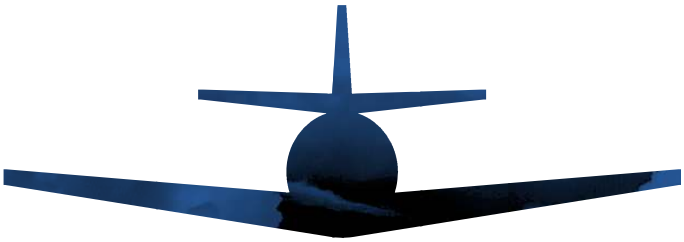

GAC 91-2

Performance Based Navigation authorisations

BAILIWICK OF GUERNSEY
Director of Civil Aviation

First Issue June 2020

Guernsey Advisory Circulars (GACs) are issued to provide advice, guidance and information on standards, practices and procedures relating to the application of the Guernsey Aviation Requirements (GARs) and services related to the Guernsey Aircraft Registry.

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Contents

1 – Purpose

The purpose of this Guernsey Advisory Circular (GAC) is to present to applicants guidance for obtaining approval for Performance-Based Navigation (PBN) specifications.

This approval will permit 2-REG Air Operator Certificate (AOC) holders, ANL Section 77 (POC) holders and GAR 91 (Private) operators to conduct operations in airspace where a navigation specification for Performance-Based Navigation is prescribed, subject to the applicable requirements of the approval.

The aircraft must be equipped with navigation equipment in accordance with the PBN navigation specification and flight crews provided with appropriate training. This GAC outlines the DCA/ 2-REG procedures for providing authorisation where a PBN navigation specification is prescribed.

1.1 Specific approvals for Performance-Based Navigation (PBN):

Guernsey regulations require aircraft operators to be approved for certain types of navigation specifications. For the following navigation specifications, the Guernsey Director of Civil Aviation (DCA) issues a specific approval as means to ensure Guernsey AOC, Section 77 (POC) holders and GAR 91 (Private) operators are compliant with GAR 91 and in particular the requirements of GAR 91.675:

Type of PBN authorisations issued*:	
○ **RNAV 10 (RNP 10)**	
○ **RNP 4 (FANS 1/A or FANS 1/A+ (PCBS) required)**	
○ **RNP 2**	○ **Continental only**
	○ **Oceanic/ Remote & Continental**
○ **RNAV 5 (B-RNAV/ RNP 5)**	
○ **RNAV 1 (P-RNAV) RNAV 2**	
○ **RNP 1**	
○ **RNP APCH**	○ **LNAV only**
	○ **LNAV & LNAV/VNAV**

	○ **LNAV, LNAV/VNAV & LPV**
	○ **LNAV, LNAV/VNAV, LPV & LP**
NOTE* For RNP AR "Authorisation Required" APCH, A-RNP (Advanced) and RNP 0.3 authorisations please contact 2-REG.	

The fees for applying for these specific approvals can be found on the 2-REG website, https://www.2-reg.com/services/fees-2/.

2 – Related laws and regulations

This GAC relates to:

- The Air Navigation (Bailiwick of Guernsey) Law, 2012 (ANL), Chapter VI.
- Guernsey Aviation Requirements Part 91, Part 125, Part 119, Part 135 and Part 121.
- ICAO Annex 6 – Operation of Aircraft.
- ICAO Document 9613 Performance-based Navigation (PBN) Manual.
- ICAO Document 9997 Performance-based Navigation (PBN) Operational Approval Manual.
- ICAO Document 8335 Manual of Procedures for Operations Inspection, Certification and Continued Surveillance.
- ICAO Document 4444 ATM-Air Traffic Management.
- ICAO Document 7030 Regional Supplementary Procedures.
- FAA Advisory Circular AC 90-105A Approval Guidance for RNP Operations.

3 – Abbreviations and Definitions

Abbreviations and Definitions, in the context of this GAC, will have the meanings listed in GAR Part 1 (Definitions, Abbreviations and Units of Measurement) unless otherwise stated. The definitions specific to this GAC are the following:

Aircraft-based augmentation system (ABAS). An augmentation system that augments and/ or integrates the information obtained from the other GNSS elements with information available on board the aircraft.

NOTE.— The most common form of ABAS is receiver autonomous integrity monitoring (RAIM).

Airspace concept. An airspace concept describes the intended operations within an airspace. Airspace concepts are developed to satisfy explicit strategic

objectives such as improved safety, increased air traffic capacity and mitigation of environmental impact. Airspace concepts can include details of the practical organization of the airspace and its users based on particular CNS/ ATM assumptions, e.g. ATS route structure, separation minima, route spacing and obstacle clearance.

Approach procedure with vertical guidance (APV). An instrument procedure which utilizes lateral and vertical guidance but does not meet the requirements established for precision approach and landing operations.

Area navigation. A method of navigation which permits aircraft operation on any desired flight path within the coverage of ground or space-based navigation aids or within the limits of the capability of self-contained aids, or a combination of these.

NOTE.— Area navigation includes Performance-based Navigation as well as other RNAV operations that do not meet the definition of Performance-based Navigation.

Area navigation route. An ATS route established for the use of aircraft capable of employing area navigation.

ATS surveillance service. A term used to indicate a service provided directly by means of an ATS surveillance system.

ATS surveillance system. A generic term meaning variously, ADS-B, PSR, SSR or any comparable ground-based system that enables the identification of aircraft.

NOTE.— A comparable ground-based system is one that has been demonstrated, by comparative assessment or other methodology, to have a level of safety and performance equal to or better than monopulse SSR.

Cyclic redundancy check (CRC). A mathematical algorithm applied to the digital expression of data that provides a level of assurance against loss or alteration of data.

Mixed navigation environment. An environment where different navigation specifications may be applied within the same airspace (e.g. RNP 10 routes and RNP 4 routes in the same airspace) or where operations using conventional navigation are allowed in the same airspace with RNAV or RNP applications.

Navigation aid (NAVAID) infrastructure. NAVAID infrastructure refers to space-based and or ground-based NAVAIDs available to meet the requirements in the navigation specification.

Navigation application. The application of a navigation specification and the supporting NAVAID infrastructure, to routes, procedures, and/or defined airspace volume, in accordance with the intended airspace concept.

NOTE.— The navigation application is one element, along with communications, ATS surveillance and ATM procedures which meet the strategic objectives in a defined airspace concept.

Navigation function. The detailed capability of the navigation system (such as the execution of leg transitions, parallel offset capabilities, holding patterns, navigation databases) required to meet the airspace concept.

NOTE.— Navigational functional requirements are one of the drivers for the selection of a particular navigation specification. Navigation functionalities (functional requirements) for each navigation specification can be found in ICAO Doc 9613.

Navigation specification. A set of aircraft and aircrew requirements needed to support Performance-based Navigation operations within a defined airspace. There are two kinds of navigation specification:

RNAV specification. A navigation specification based on area navigation that does not include the requirement for on-board performance monitoring and alerting, designated by the prefix RNAV, e.g. RNAV 5, RNAV 1.

RNP specification. A navigation specification based on area navigation that includes the requirement for on-board performance monitoring and alerting, designated by the prefix RNP, e.g. RNP 4, RNP APCH.

NOTE.— ICAO Doc 9613 of this manual contains detailed guidance on navigation specifications.

Performance-based navigation. Area navigation based on performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace.

NOTE.— Performance requirements are expressed in navigation specifications in terms of accuracy, integrity, continuity and functionality needed for the proposed operation in the context of a particular airspace concept. Availability of GNSS SIS or some other NAVAID infrastructure is considered within the airspace concept in order to enable the navigation application.

Procedural control. Air traffic control service provided by using information derived from sources other than an ATS surveillance system.

Receiver autonomous integrity monitoring (RAIM). A form of ABAS whereby a GNSS receiver processor determines the integrity of the GNSS navigation signals using only GPS signals or GPS signals augmented with altitude (baroaiding). This determination is achieved by a consistency check among redundant pseudo range measurements. At least one additional satellite needs to be available with the correct geometry over and above that needed for the position estimation, for the receiver to perform the RAIM function.

RNAV operations. Aircraft operations using area navigation for RNAV applications. RNAV operations include the use of area navigation for operations which are not developed in accordance with this manual.

RNAV system. A navigation system which permits aircraft operation on any desired flight path within the coverage of station-referenced navigation aids or within the limits of the capability of self-contained aids, or a combination of these. An RNAV system may be included as part of a flight management system (FMS).

RNP operations. Aircraft operations using an RNP system for RNP navigation applications.

RNP route. An ATS route established for the use of aircraft adhering to a prescribed RNP navigation specification.

RNP system. An area navigation system which supports on-board performance monitoring and alerting.

Satellite-based augmentation system (SBAS). A wide coverage augmentation system in which the user receives augmentation information from a satellite-based transmitter.

Standard instrument arrival (STAR). A designated instrument flight rule (IFR) arrival route linking a significant point, normally on an ATS route, with a point from which a published instrument approach procedure can be commenced.

Standard instrument departure (SID). A designated instrument flight rule (IFR) departure route linking the aerodrome or a specified runway of the aerodrome with a specified significant point, normally on a designated ATS route, at which the en-route phase of a flight commences.

4 – Introduction

4.1 Background

Conventional navigation is dependent upon ground-based radio navigation aids. It has been the mainstay of aviation for the last seventy years and pilots, operators, manufacturers and air navigation service providers are all familiar with the associated technology, avionics, instrumentation, operations, training and performance.

Performance-based navigation (PBN) detailed in the ICAO Performance-based Navigation (PBN) Manual (Doc 9613) is based upon area navigation principles. While various methods of area navigation have been in existence for many years, the widespread use of area navigation as a primary navigation function is a more recent phenomenon. The PBN concept is intended to better define the use of area navigation systems and is expected to replace much of the existing conventional navigation routes in the near future.

The fundamentals of PBN operations are relatively straightforward. However, the transition to new technology, new navigation and new operational concepts and the dependence on data driven operations requires careful management. Concerning this matter, ICAO has developed the Performance-Based Navigation (PBN) Operational Approval Manual (Doc 9997) to provide guidance on the operational approval process in the context of Performance-Based Navigation (PBN). It is intended for inspectors and others involved in the regulation of PBN operations.

4.2 Overview of PBN

4.2.1 Development of PBN

Area navigation systems evolved in a manner similar to conventional ground based routes and procedures. The early systems used very high-frequency omnidirectional radio range (VOR) and distance measuring equipment (DME) for estimating their position in domestic operations and inertial navigation systems (INS) were employed in oceanic operations. In most cases, a specific area navigation system was identified and its performance was evaluated through a combination of analysis and flight testing. In some cases, it was necessary to identify the individual models of equipment that could be operated within the airspace concerned. Such prescriptive requirements resulted in delays to the introduction of new area navigation system capabilities and higher costs for maintaining appropriate certification. The PBN concept was developed with globally-applicable performance requirements, detailed in accompanying navigation specifications, in order to avoid these high costs and delays.

4.2.2 PBN Concept

The PBN concept requires that the aircraft area navigation system performance is defined in terms of the **accuracy, integrity, availability, continuity** and **functionality** necessary to operate in the context of a particular airspace concept. Appropriate positioning sensors are also identified. These may include VOR/DME, DME/DME, GNSS and/or INS. The performance is detailed in a navigation specification at sufficient a level of detail to facilitate global harmonisation. The navigation specification not only lays out the aircraft system performance requirements but also the requirements in terms of flight crew procedures and training, as well as any appropriate maintenance requirements, such as the provision of navigation databases.

4.2.3 Navigation databases

Databases shall be obtained from a supplier that complies with RTCA DO 200A/EUROCAE document ED 76, Standards for Processing Aeronautical Data. A Letter of Authority (LOA) issued by an appropriate regulatory authority (e.g. FAA, EASA) to each of the stakeholders in the data chain will demonstrate compliance with this requirement.

The packed navigation databases should be delivered to the operator at least one week prior to the AIRAC effective date. The operator should have procedures in place for ensuring:

a) the correct version of the navigation database is loaded on the aircraft;

b) any database errors/omissions reported by the suppliers are addressed expeditiously by flight crew briefing/removal of procedures etc.;

c) any database errors/omissions reported by the flight crew are addressed expeditiously by flight crew briefing/removal of procedures and reported back to the database suppliers;

d) the version of the loaded navigation database is checked for validity by the flight crew prior to departure;

e) prior to use, after loading into the area navigation system, the procedure is checked against the chart, by the flight crew, for waypoint sequence, waypoint transition, leg length, magnetic bearing, altitude constraint and speed constraint;

f) the onboard navigation data is appropriate for the region of operations;

g) that a responsible manager is nominated within their procedures for the data updating process; and

h) that their documented data process is placed under configuration control.

4.2.4 RNAV and RNP

RNAV specifications have been developed to support existing capabilities in aircraft equipped with area navigation systems which, in the general case, were not designed to provide on-board performance monitoring and alerting. RNAV specifications are similar to RNP specifications but do not require an on-board performance monitoring and alerting capability.

RNP specifications have been developed from a need to support operations that require greater integrity assurance, where the pilot is able to detect when the navigation system is not achieving, or cannot guarantee with appropriate integrity, the navigation performance required for the operation. Such systems

are known as RNP systems. RNP systems provide greater assurance of integrity and, hence, can offer safety, efficiency, capacity and other operational benefits.

5 – Application process

The DCA will issue operational approval to operators, where a navigation specification for PBN is prescribed, provided that the operator can demonstrate compliance with the applicable requirements. A list of available navigation specifications by flight phase is outlined at Appendix A.

Operators requesting approval for a particular PBN specification shall make an application using the applicable Job Aids. These required individual PBN specification Job Aids, which are intended as compliance checklists, are available to applicants for PBN approvals from 2-REG on request.

5.1 Requirements

- This GAC applies to AOC, Section 77 (POC) operators and and GAR 91 (Private) operators, who are referred to as the "operator" in this document.
- This section describes the approval process.

5.2 Application Forms

- Application for approval of use of PBN must be made using Form A.OPS.SPA available from 2-REG.
- PBN approvals will certify that aircraft and operator meet the PBN navigation specifications.

5.3 RNAV 10/ RNP 10 requirements

Airspace, routes, airworthiness and operational approvals are designated RNP 10 but the term is interchangeable with RNAV 10 (RNP 10 did not include a requirement for on-board performance monitoring/alerting); 2-REG procedures will use the RNP 10 designation.

RNAV 10 supports 50 nm lateral and 50 nm longitudinal distance-based separation minima in oceanic or remote area airspace.

- TSE (Total System Error) and ATRK (Along Track Error) must be within +/- 10 nm for at least 95% of the total flight time;
- RNAV 10 is based on the use of dual LRNS;
- No requirement for onboard performance monitoring and alerting;

- Cross-track errors maximum 5 nm (10 nm in turns);
- For information on RNP time limits see FAA AC 90-105A Appendix G;
- In-flight procedures must include verification of the RNP value set in the FMS matching the equipment capability and authorizations as annotated in the flight plan before oceanic/remote area entry points;
- Pilot knowledge and training requirements are detailed in Doc 9613; pilots should possess the necessary skills but if additional minimal training is required this can be achieved by means of briefing note, CBT or classroom training. Flight training is not normally required;
- Any aircraft that is eligible for RNP 4 operations automatically qualifies for RNP 10 aircraft eligibility.

5.4 RNP 4 requirements

Supports 30 nm lateral and 30 nm longitudinal distance-based separation minima in oceanic or remote continental area airspace (RNP 4 airspace exists in the NAT-HLA and PAC regions).

- Approval is based on dual independent LRNS; GNSS required either standalone or within multi-sensor system, or as part of an integrated GNSS/inertial system;
- Onboard navigation performance monitoring and alerting required;
- TSE (Total System Error) and ATRK (Along Track Error) must be within +/- 4 nm for at least 95% of the total flight time;
- Cross-track errors maximum 2nm (4 nm in turns);
- Maximum outage time of fault detection and exclusion FDE (25 mins) is a condition for RNP 4 approval;
- FANS 1/A approval is required in order to operate with reduced separation standards in oceanic/ remote regions;
- Pilot knowledge and training requirements are detailed in Doc 9613; pilots should possess the necessary skills but if additional minimal training is required this can be achieved by means of briefing note, CBT or classroom training. Flight training is not normally required;
- Standard oceanic contingency procedures apply, but flight crews must recognise and advise ATC when the aircraft is no longer able to navigate to its approved RNP 4 capability.

5.5 RNP 2 requirements

Supports En-route applications in oceanic, remote and continental/offshore airspace; continuity requirements for continental applications are lower than those for oceanic/remote applications.

Unlike RNP 4, RNP 2 has no standard track spacing connotation.

- Approval is based on GNSS, including GNSS/IRU; dual GPS LRNS for oceanic/remote, single for domestic/offshore airspace;
- Tango routes (NAT-HLA) T9 and T290 are classed as RNP2 continental offshore routes from 30 Jan 2020. Both require: **1 LRNS, 1 HF,** and **ADS-B (but not FANS 1/A)**;
- FDE mandatory for RNP 2 oceanic or remote continental operations;
- RAIM prediction required;
- RNP 2 must not be used in areas of known GNSS signal interference;
- TSE (Total System Error) and ATRK (Along Track Error) must be within +/- 2nm for at least 95% of the total flight time;
- Cross-track errors maximum 1 nm (2 nm in turns);
- Pilot knowledge and training requirements are detailed in Doc 9613; pilots should possess the necessary skills but if additional minimal training is required this can be achieved by means of briefing note, CBT or classroom training. Flight training is not normally required.

5.6 RNP 1 requirements

Provides a means to connect En-route structures and terminal airspace with no or limited ATS surveillance, with low to medium density traffic levels (SIDs and STARs).

Based upon GNSS (other than this, there is no significant difference between RNP 1 and RNAV 1/RNAV 2); while DME/DME-based RNAV systems are capable of RNP 1 accuracy, RNP 1 is intended for use where DME infrastructure cannot support DME/DME navigation to the required performance level.

- RNP 1 must not be used in areas of known GNSS signal interference;
- Pilot knowledge and training requirements are detailed in Doc 9613; pilots should possess the necessary skills but if additional minimal training is required this can be achieved by means of briefing note, CBT or classroom training. Flight training is not normally required;

- TSE (Total System Error) and ATRK (Along Track Error) must be within +/- 1 nm for at least 95% of the total flight time*;
- RAIM prediction required;
- Cross-track errors maximum 0.5 nm (1 nm in turns).

*(RNP 1 provides track-keeping of +/- 1 nm for 95% of flight time during:

- Arrival
- Initial approach
- Intermediate approach
- Missed approach (after initial climb of MAP)
- Departure
- Beyond 30 nm from the ARP the alerting accuracy value = +/- 2 nm).

5.7 RNP APCH requirements

For use during approach and missed approach that are not AR (Authorization Required) procedures.

For specified accuracy see Appendix A to this GAC.

- GNSS is used for:
  - LNAV: lateral positioning with GNSS (basic constellation)
  - LNAV/VNAV: lateral positioning with GNSS, vertical with barometric input
  - LPV: lateral and vertical positioning with SBAS
  - LP: lateral positioning with SBAS
- DME/DME-based systems are not acceptable for RNP APCH but the missed approach segment may be based on conventional navaids;
- The published RNP APCH OCA/H are treated as:
  - MDA/H for LNAV and LP minima
  - DA/H for LNAV/VNAV and LPV minima
- Aircraft requirements and operating procedures are detailed in ICAO Doc 9613, Vol II, Part C, Chapter 5;
- Flight crew knowledge and training requirements are detailed in ICAO Doc 9613, Vol II, Part C, Chapter 5. Sound flight crew knowledge and training are required; the amount of training will depend on the flight crew's previous area navigation training but training in either a FTD/FSTD/aircraft is required;
- TSE (Total System Error) and ATRK (Along Track Error) must be within +/- 1 nm for at least 95% of the total flight time; in the final approach segment lateral TSE and ATRK must be within +/- 0.3 nm;

- LNAV/VNAV approaches should have minima with low and high temperature limitations such that the approach may not be flown outside of the approved temperature range. Baro-VNAV approaches require significantly higher levels of flight crew knowledge. When the aerodrome temperature is 0°C or colder, the temperature error correction must be added to:
  - DH/DA or MDH/MDA and step-down fixes inside the final approach fix (FAF).
  - All low altitude approach procedure altitudes in mountainous regions (terrain of 3000 ft AMSL or higher)

  Operators using Baro-VNAV in an aircraft with an airworthiness approval for automatic temperature compensation, or in an aircraft using an alternate means for vertical guidance e.g. Satellite-Based Augmentation Systems (SBAS), may disregard the temperature limits (high temperature limit still applies if the system only compensates for low temperature);
- RNP APCH operations are critically dependent on valid data;
- LNAV/VNAV is also known as APV-Baro VNAV;
- LPV is also known as APV SBAS;
- LP approach is known as RNP Approach in the USA;
- An operational evaluation should be considered (flown in FSTD or in aircraft in VMC)) of an RNP APCH planned for use in mountainous environments, proximate to significant obstacles, no radar coverage, low altitude MAP turns, procedure subject to a declared exemption to procedures design rules.

5.8 RNAV 5 requirements

A basic En-route navigation application; known in Europe as B-RNAV (Basic-RNAV).

Adopted in ME states as RNP 5; mandated above FL 95 in EU State airspace.

- Operations are based on RNAV equipment that determines aircraft position using inputs from one or more of the following sensors, together with means to establish and follow a programmed path:
  - VOR/DME
  - DME/DME
  - INS/IRS
  - GNSS

- Normal area navigation operating procedures will usually meet the requirements of RNAV 5;
- Track-keeping accuracy is required equal to or better than +/- 5 nm for 95% of the flight time;
- Pilot knowledge and training requirements are detailed in Doc 9613; pilots should possess the necessary skills but if additional minimal training is required this can be achieved by means of briefing note, CBT or classroom training. Flight training is not normally required;
- Where a navigation database is used, it should be current in the AIRAC cycle and include all navaids and waypoints required for any expected routings;
- Given that most modern aircraft are equipped with area nav systems that exceed RNAV 5 capability, operational approval of RNAV 5 should only require amendments to the OM suite as necessary (including MEL) and be generally straightforward.

5.9 RNAV 1 (P-RNAV)/ RNAV 2 requirements

Resulted from harmonisation of US and EU standards but P-RNAV does not meet fully RNAV 1 standards.

Aircraft requirements for RNAV 1/ RNAV 2 are identical but operational procedures differ.

- RNAV 1 provides track-keeping accuracy equal to or better than +/- 1 nm for 95% of the flight time;
- RNAV 2 provides track-keeping accuracy equal to or better than +/- 2 nm for 95% of the flight time;
- RNAV 1 and RNAV 2 use GNSS or DME/DME/RNAV or DME/DME/IRU navigation to support:
  - En-route continental operations
  - SIDs / STARs
  - Initial, intermediate and missed approach procedures (RNAV 1)
- A single approval is given for RNAV 1/RNAV 2;
- Operators with En-route area nav experience will generally meet RNAV 1/RNAV 2 requirements; operational approval should focus on SIDs/STARs procedures;
- If position determination is based exclusively on VOR/DME the aircraft is not eligible for RNAV 1/RNAV 2 operations;

- Most crews will already have some experience of area navigation operations and much of the knowledge and training will have been covered in past training. Particular attention should be placed on the application of this knowledge to the execution of RNAV 1 and RNAV 2 SIDs and STARs, including connection with the En-route structure and transition to final approach. This requires a thorough understanding of the airborne equipment, and its functionality and management.

5.10 Continuing Surveillance

Performance-Based Navigation (PBN) approvals are not time-limited; however, they will be subject to the 2-REG continuing surveillance programme for AOCs in order to ensure that all procedures are followed and are effective. Any operational event that may have an influence on the operator's PBN capability must be reported to 2-REG and will be evaluated.

END

Appendix A to GAC 91-2

Application of navigation specification by flight phase ICAO Doc 9997:

RNAV/RNP airspace is defined by the accuracy of the navigation required to take place within it. The table below lists the types of RNAV/RNP airspace and operational segments; the numbered entries refer to the 95% accuracy requirements in nm.

Flight Phase								
Navigation specification	*En-route oceanic/ remote*	*En-route continental*	*Arrival*	*Approach*				*Departure*
				Initial	*Intermediate*	*Final*	*Missed*	
RNAV 10	10							
RNAV 5[a]		5	5					
RNAV 2[b]		2	2					2
RNAV 1[b]		1	1	1	1		1[c]	1
RNP 4	4							
RNP 2	2	2						
Advanced RNP[d]	2[e]	2 or 1	1	1	1	0.3	1[c]	1
RNP 1			1[f]	1	1		1[c]	1[e]
RNP 0.3[g]		0.3	0.3	0.3	0.3	—	0.3	0.3
RNP APCH				1	1	0.3[h]	1[c] or 0.3[i]	
RNP AR APCH				1-0.1	1-0.1	0.3-0.1	1-0.1[j]	

Notes:

a) RNAV 5 is an en-route navigation specification which may be used for the initial part of a STAR outside 30 NM and above MSA.

b) RNAV 1 and RNAV 2 are issued as a single approval.

c) Applies only once 50 m (40 m Cat H) obstacle clearance has been achieved after the start of climb.

d) A-RNP also permits a range of scalable RNP lateral navigation accuracies.

e) Optional; requires higher continuity.

f) Beyond 30 NM from the airport reference point (ARP), the accuracy value for alerting becomes 2 NM.

g) The RNP 0.3 specification is primarily intended for helicopter operations.

h) The RNP APCH navigation specification is divided into two sections. RNP 0.3 is applicable to RNP APCH Section A (LNAV and LNAV/VNAV). Different angular performance requirements are applicable to RNP APCH Section B (LP and LPV).

i) This value applies during the initial straight ahead missed approach segment for RNP APCH Section B (LP and LPV).

j) If less than RNP 1 is required in the missed approach, the reliance on inertial to cater for loss of GNSS in final means that accuracy will slowly deteriorate, and any accuracy value equal to that used in final can be applied only for a limited distance.