GOVERNMENT OF INDIA

OFFICE OF THE DIRECTOR GENERAL OF CIVIL AVIATION

TECHNICAL CENTRE, OPP. SAFDARJUNG AIRPORT, NEW DELHI - 110003

CIVIL AVIATION REQUIREMENT
SECTION 8 - AIRCRAFT OPERATIONS
SERIES 'S', PART IV
ISSUE I, 4TH SEPTEMBER 2014 **EFFECTIVE: FORTHWITH**

F. No. AV. 22024/4/2014-FSD

SUBJECT: PERFORMANCE BASED NAVIGATION (PBN)

1. INTRODUCTION

1.1 The Perfomance Based Navigation (PBN) concept specifies system performance requirements in terms of accuracy, integrity, availability, continuity and functionality needed for the proposed operations in the context of a particular Airspace Concept, when supported by the appropriate navigation infrastructure. In that context, the PBN concept represents a shift from sensor-based to performance-based navigation. Performance requirements are identified in navigation specifications which also identify the choice of navigation sensors and equipment that may be used to meet the performance requirements.

1.2 This CAR is issued under the provisions of Rule 133A of the Aircraft Rules, 1937 for compliance by the concerned operators prior to operating, through and within the PBN notified airspace. The contents of the CAR are consistent with the provisions of ICAO Annex 6 Operation of Aircraft and ICAO Doc 9613 PBN Manual.

2. DEFINITIONS

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

Navigation specification - A set of aircraft and flight crew requirements needed to support performance-based navigation operations within a defined airspace as described in the ICAO PBN Manual (Doc 9613).

Required navigation performance (RNP) specification - A navigation specification based on area navigation that includes the requirement for performance monitoring and alerting, designated by the prefix RNP.

Area navigation (RNAV) specification - A navigation specification based on area navigation that does not include the requirement for performance monitoring and alerting, designated by the prefix RNAV.

3. PBN OPERATIONS

3.1 No aircraft shall be operated along ATS routes, on an instrument approach procedure, or in a designated airspace where a Navigation Specification has been prescribed unless:

(a) The operator has received authorization from the Director General.

(b) The aircraft is equipped with the navigation equipment to enable it to operate in accordance with the prescribed Navigation Specification; and

(c) The aircraft is equipped with navigation equipment that continuously provides information to the flight crew of adherence to or departure from track with respect to the required degree of accuracy at any point along that track.

3.2 No person shall operate an aircraft unless it has sufficient navigation equipment that will enable the aircraft to navigate in accordance with paragraph 3.1 above, such that in the event of the failure of any piece of navigation equipment at any stage of flight, the remaining equipment will enable the aircraft to continue to a destination or an alternate destination.

4. APPLICATION FOR A SPECIFIC APPROVAL

4.1 An applicant for the initial issue of a specific approval shall provide the DGCA with the documentation required, as detailed on the application form (see Appendix 1), and the following information:

(a) The official name, address and mailing address of the applicant; and

(b) A description of the intended operation.

4.2 An applicant for a specific approval shall provide evidence to the DGCA that:

(a) the applicant complies with the requirements;

(b) the aircraft and required equipment fulfil the applicable airworthiness requirements, are maintained according to the approved maintenance programme and are approved when required;

(c) a training programme has been established for flight crew and, as applicable, personnel involved in these operations; and

(d) operating procedures in accordance with the requirements have been documented. Operating procedures should be documented in the operations manual. If an operations manual is not required, operating procedures may be described in a procedures manual.

4.3 An operator shall retain records relating to the requirements of 4.1 and 4.2 above at least for the duration of the operation requiring the specific approval.

5. PRIVILEGES OF AN OPERATOR HOLDING A SPECIFIC APPROVAL

The scope of the activity that the operator is approved to conduct shall be documented and specified:

(a) for commercial operators, in the operations specifications associated to the air operator certificate / air operator permit; and

(b) for general aviation operators, in a letter of authorisation.

6. CHANGES TO OPERATIONS SUBJECT TO A SPECIFIC APPROVAL

In case of a change that affects the conditions of a specific approval, the operator shall provide the relevant documentation to the competent authority and obtain prior approval for the change to operation, documented by an amendment to the approval document.

7. CONTINUED VALIDITY OF A SPECIFIC APPROVAL

Specific approvals shall be issued for an unlimited duration. They shall remain valid subject to the operator remaining in compliance.

8. PBN OPERATIONAL APPROVAL

The criteria and requirements for an operator to be issued a PBN operational approval by the DGCA are covered in the following Operations Circulars;

(a) Operations Circular 6 of 2014 – RNAV 10 approval

(b) Operations Circular 7 of 2014 – RNAV 5 approval

(c) Operations Circular 8 of 2014 – RNAV 1 and RNAV 2 approval

(d) Operations Circular 9 of 2014 – RNP 1 approval

(e) Operations Circular 10 of 2014 – RNP 4 approval

(f) Operations Circular 11 of 2014 – RNP APCH approval

(g) Operations Circular 12 of 2014 – APV/baro-VNAV approval

(h) Operations Circular 13 of 2014 – RNP AR APCH approval

(i) Operations Circular 14 of 2014 – RNP 2 approval

9. ELECTRONIC NAVIGATION DATA MANAGEMENT

In addition, electronic navigation data products that have been processed for application in the air and on the ground shall be used only once the DGCA has approved the operator's procedures for:

(a) ensuring acceptable standards of data integrity and compatibility with the intended function;

(b) continual monitoring of the related data processes and the products; and

(c) ensuring the timely distribution and insertion of electronic navigation data.

10. ***FEES***

Fees for PBN approval on first aircraft type with the operator shall be Rs Ten Thousand only

11. This CAR supersedes CAR Section 8 Series O Part VI.

Sd/-
(Vir Vikram Yadav)
Director General of Civil Aviation

Appendix 1

EXAMPLE APPPLICATION FORM

APPLICATION FOR XXXX OPERATIONAL APPROVAL

Please complete the form in print or BLOCK CAPITALS using black or dark blue ink.

This form is designed to elicit all the required information from those operators requiring [Insert PBN type] operations approvals. The completed form and supporting documentation should be submitted to the Regional Office of the DGCA

SECTION I.
OPERATOR/AIRFRAME DETAILS

1. Applicant details		
Provide official name, address, mailing address, e-mail address and contact telephone/facsimile numbers.		
2. Aircraft details Aeroplane type(s), series and registration mark(s)		
Aeroplane type	*Aeroplane series*	*Registration*

SECTION II. NOTES FOR COMPLETION

1. Applicability
General description of the operation with references to appropriate standards and guidance material.

2. Operator's submissions matrix

Section III of this application form is the operator's submissions matrix. All applicants should complete this matrix in full. If more than one type of aircraft/fleet is included in a single application a completed matrix should be included for each aircraft/fleet.

FAILURE TO COMPLETE THE SUBMISSIONS MATRIX MAY RESULT IN A DELAY IN PROCESSING THE APPLICATION.

3. Documents to be included with the submission

Copies of all documents referred to in the operator's submissions matrix should be included when returning the completed application form to the DGCA. Original documents should not be sent; photocopies are sufficient. Do not send complete manuals, only the relevant sections/pages.

FAILURE TO INCLUDE ALL RELEVANT DOCUMENTATION MAY RESULT IN A DELAY IN PROCESSING THE APPLICATION.

4. Submissions and enquiries

Address for submissions and contact details of the operator's nodal point for enquiries.

Signature: .....

Name (block letters):.....

Title: .....

Date: .....

SECTION III. OPERATOR'S SUBMISSIONS MATRIX

Reference documents	Submission based upon current regulatory material. Compliance statement should show how criteria have been satisfied.	List of appropriate documents
Airworthiness navigation system capability compliance statement	Specify to what standards the navigation system complies.	List of applicable standards/TSOs/guidance material
Aircraft flight manual	Copy of the extract from the AFM showing the certification standard for PBN operation.	
Navigation system FMS/autopilot interface capability	Full details of navigation system, FMS and autopilot including type, number, software version.	
Navigation accuracy	Statement of certified navigation accuracy.	
Navigation database	Details of the supplier of the navigation database, the supplier's approval status and, where necessary, additional quality assurance/data integrity checks applied by the operator or the supplier.	
Maintenance	Details of maintenance procedures applicable to the navigation system and associated databases.	
Charts	Details of the supplier of charts, supplier's approval status and, where necessary, additional quality assurance/data integrity checks applied by the operator or the supplier.	
Error reporting	Outline of error reporting process and procedures for error analysis, prevention and correction, including feedback to the CAA, navigation database and chart suppliers, as well as OEMs.	
Standard operating procedures	Details of applicable operating procedures. It is recommended that the manufacturer's procedures are used as a starting point.	
Operations manual	Details of dispatch requirements (navigation accuracy, MEL, RAIM, NOTAMs); RTF phraseology; SOPs; crew authorization requirements; training and testing requirements.	
Any further comments		