

**GM1 NCO.IDE.A.195 Navigation equipment**

## AIRCRAFT ELIGIBILITY FOR PBN SPECIFICATION NOT REQUIRING SPECIFIC APPROVAL

- (a) The performance of the aircraft is usually stated in the AFM/POH.
- (b) Where such a reference cannot be found in the AFM/POH, other information provided by the aircraft manufacturer as TC holder, the STC holder or the design organisation having a privilege to approve minor changes may be considered.
- (c) The following documents are considered acceptable sources of information:

- (1) AFM/POH, supplements thereto, and documents directly referenced in the AFM/POH;
  - (2) FCOM or similar document;
  - (3) Service Bulletin or Service Letter issued by the TC holder or STC holder;
  - (4) approved design data or data issued in support of a design change approval;
  - (5) any other formal document issued by the TC or STC holders stating compliance with PBN specifications, AMC, Advisory Circulars (AC) or similar documents issued by the State of Design; and
  - (6) written evidence obtained from the State of Design.
- (d) Equipment qualification data, in itself, is not sufficient to assess the PBN capabilities of the aircraft, since the latter depend on installation and integration.
- (e) As some PBN equipment and installations may have been certified prior to the publication of the PBN Manual and the adoption of its terminology for the navigation specifications, it is not always possible to find a clear statement of aircraft PBN capability in the AFM/POH. However, aircraft eligibility for certain PBN specifications can rely on the aircraft performance certified for PBN procedures and routes prior to the publication of the PBN Manual.
- (f) Below, various references are listed which may be found in the AFM/POH or other acceptable documents (see listing above) in order to consider the aircraft's eligibility for a specific PBN specification if the specific term is not used.
- (g) RNAV 5
- (1) If a statement of compliance with any of the following specifications or standards is found in the acceptable documentation as listed above, the aircraft is eligible for RNAV 5 operations.
    - (i) B-RNAV;
    - (ii) RNAV 1;
    - (iii) RNP APCH;
    - (iv) RNP 4;
    - (v) A-RNP;
    - (vi) AMC 20-4;
    - (vii) JAA TEMPORARY GUIDANCE MATERIAL, LEAFLET NO. 2 (TGL 2);
    - (viii) JAA AMJ 20X2;
    - (ix) FAA AC 20-130A for en route operations;
    - (x) FAA AC 20-138 for en route operations; and
    - (xi) FAA AC 90-96.
- (h) RNAV 1/RNAV 2
- (1) If a statement of compliance with any of the following specifications or standards is found in the acceptable documentation as listed above, the aircraft is eligible for RNAV 1/RNAV 2 operations.
    - (i) RNAV 1;
    - (ii) PRNAV;

- (iii) US RNAV type A;
  - (iv) FAA AC 20-138 for the appropriate navigation specification;
  - (v) FAA AC 90-100A;
  - (vi) JAA TEMPORARY GUIDANCE MATERIAL, LEAFLET NO. 10 Rev1 (TGL 10); and
  - (vii) FAA AC 90-100.
- (2) However, if position determination is exclusively computed based on VOR-DME, the aircraft is not eligible for RNAV 1/RNAV 2 operations.
- (i) RNP 1/RNP 2 continental
- (1) If a statement of compliance with any of the following specifications or standards is found in the acceptable documentation as listed above, the aircraft is eligible for RNP 1/RNP 2 continental operations.
- (i) A-RNP;
  - (ii) FAA AC 20-138 for the appropriate navigation specification; and
  - (iii) FAA AC 90-105.
- (2) Alternatively, if a statement of compliance with any of the following specifications or standards is found in the acceptable documentation as listed above and position determination is primarily based on GNSS, the aircraft is eligible for RNP 1/RNP 2 continental operations. However, in these cases, loss of GNSS implies loss of RNP 1/RNP 2 capability.
- (i) JAA TEMPORARY GUIDANCE MATERIAL, LEAFLET NO. 10 (TGL 10) (any revision); and
  - (ii) FAA AC 90-100.
- (j) RNP APCH — LNAV minima
- (1) If a statement of compliance with any of the following specifications or standards is found in the acceptable documentation as listed above, the aircraft is eligible for RNP APCH — LNAV operations.
- (i) A-RNP;
  - (ii) AMC 20-27;
  - (iii) AMC 20-28;
  - (iv) FAA AC 20-138 for the appropriate navigation specification; and
  - (v) FAA AC 90-105 for the appropriate navigation specification.
- (2) Alternatively, if a statement of compliance with RNP 0.3 GNSS approaches in accordance with any of the following specifications or standards is found in the acceptable documentation as listed above, the aircraft is eligible for RNP APCH — LNAV operations. Any limitation such as ‘within the US National Airspace’ may be ignored since RNP APCH procedures are assumed to meet the same ICAO criteria around the world.
- (i) JAA TEMPORARY GUIDANCE MATERIAL, LEAFLET NO. 3 (TGL 3);
  - (ii) AMC 20-4;
  - (iii) FAA AC 20-130A; and
  - (iv) FAA AC 20-138.

- (k) RNP APCH — LNAV/VNAV minima
- (1) If a statement of compliance with any of the following specifications or standards is found in the acceptable documentation as listed above, the aircraft is eligible for RNP APCH — LNAV/VNAV operations.
    - (i) A-RNP;
    - (ii) AMC 20-27 with Baro VNAV;
    - (iii) AMC 20-28;
    - (iv) FAA AC 20-138; and
    - (v) FAA AC 90-105 for the appropriate navigation specification.
  - (2) Alternatively, if a statement of compliance with FAA AC 20-129 is found in the acceptable documentation as listed above, and the aircraft complies with the requirements and limitations of EASA SIB 2014-04<sup>6</sup>, the aircraft is eligible for RNP APCH — LNAV/VNAV operations. Any limitation such as ‘within the US National Airspace’ may be ignored since RNP APCH procedures are assumed to meet the same ICAO criteria around the world.
- (l) RNP APCH — LPV minima
- (1) If a statement of compliance with any of the following specifications or standards is found in the acceptable documentation as listed above, the aircraft is eligible for RNP APCH — LPV operations.
    - (i) AMC 20-28;
    - (ii) FAA AC 20-138 for the appropriate navigation specification; and
    - (iii) FAA AC 90-107.
  - (2) For aircraft that have a TAWS Class A installed and do not provide Mode-5 protection on an LPV approach, the DH is limited to 250 ft.
- (m) RNAV 10
- (1) If a statement of compliance with any of the following specifications or standards is found in the acceptable documentation as listed above, the aircraft is eligible for RNAV 10 operations.
    - (i) RNP 10;
    - (ii) FAA AC 20-138 for the appropriate navigation specification;
    - (iii) AMC 20-12;
    - (iv) FAA Order 8400.12 (or later revision); and
    - (v) FAA AC 90-105.
- (n) RNP 4
- (1) If a statement of compliance with any of the following specifications or standards is found in the acceptable documentation as listed above, the aircraft is eligible for RNP 4 operations.
    - (i) FAA AC 20-138B or later, for the appropriate navigation specification;
    - (ii) FAA Order 8400.33; and

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<sup>6</sup> <http://ad.easa.europa.eu/ad/2014-04>

- (iii) FAA AC 90-105 for the appropriate navigation specification.
- (o) RNP 2 oceanic
  - (1) If a statement of compliance with FAA AC 90-105 for the appropriate navigation specification is found in the acceptable documentation as listed above, the aircraft is eligible for RNP 2 oceanic operations.
  - (2) If the aircraft has been assessed eligible for RNP 4, the aircraft is eligible for RNP 2 oceanic.
- (p) Special features
  - (1) RF in terminal operations (used in RNP 1 and in the initial segment of the RNP APCH)
    - (i) If a statement of demonstrated capability to perform an RF leg, certified in accordance with any of the following specifications or standards, is found in the acceptable documentation as listed above, the aircraft is eligible for RF in terminal operations.
      - (A) AMC 20-26; and
      - (B) FAA AC 20-138B or later.
    - (ii) If there is a reference to RF and a reference to compliance with AC 90-105, then the aircraft is eligible for such operations.
- (q) Other considerations
  - (1) In all cases, the limitations in the AFM/POH need to be checked, in particular the use of AP or FD which can be required to reduce the FTE primarily for RNP APCH, RNAV 1, and RNP 1.
  - (2) Any limitation such as 'within the US National Airspace' may be ignored since RNP APCH procedures are assumed to meet the same ICAO criteria around the world.

## **GM2 NCO.IDE.A.195 Navigation equipment**

### GENERAL

- (a) The PBN specifications for which the aircraft complies with the relevant airworthiness criteria are set out in the AFM/POH, together with any limitations to be observed.
- (b) Because functional and performance requirements are defined for each navigation specification, an aircraft approved for an RNP specification is not automatically approved for all RNAV specifications. Similarly, an aircraft approved for an RNP or RNAV specification having a stringent accuracy requirement (e.g. RNP 0.3 specification) is not automatically approved for a navigation specification having a less stringent accuracy requirement (e.g. RNP 4).

### RNP 4

- (c) For RNP 4, at least two LRNSs, capable of navigating to RNP 4, and listed in the AFM/POH, may be operational at the entry point of the RNP 4 airspace. If an item of equipment required for RNP 4 operations is unserviceable, then the pilot-in-command may consider an alternate route or diversion for repairs. For multi-sensor systems, the AFM/POH may permit entry if one GNSS sensor is lost after departure, provided one GNSS and one inertial sensor remain available.