REGULATIONS

COMMISSION IMPLEMENTING REGULATION (EU) 2018/1048

of 18 July 2018

laying down airspace usage requirements and operating procedures concerning performance-based navigation

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EC) No 216/2008 of the European Parliament and of the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, and repealing Council Directive 91/670/EEC, Regulation (EC) No 1592/2002 and Directive 2004/36/EC ([1]), and in particular Article 8b(6) thereof,

Whereas:

(1) The continued growth of aviation is placing increasing demands on the use of available airspace, thus heightening the need to use it as effectively and efficiently as possible. The provision of air traffic management/air navigation services (ATM/ANS) using performance-based navigation (PBN) can bring safety, capacity and efficiency benefits through the optimisation of air traffic service routes and instrument approach procedures. In order to achieve those benefits and improve the performance of the European air traffic management network, harmonised airspace usage requirements and operating procedures concerning PBN should be provided for.

(2) Those requirements and procedures concerning PBN should be based on the rules developed by the International Civil Aviation Organisation (ICAO) and their implementation should be in accordance with the ICAO Global Air Navigation Plan ([2]) and the European ATM Master Plan ([3]).

(3) The Annex to Commission Implementing Regulation (EU) No 923/2012 ([4]) and in particular point SERA.5015(a) thereof, Annex III to Commission Regulation (EU) No 965/2012 ([5]) and in particular point ORO.GEN.110(d) thereof, Article 9(1) of Regulation (EC) No 216/2008, as implemented by Annex I to Commission Regulation (EU) No 452/2014 ([6]), and in particular point TCO.205 thereof, require that aircraft be equipped and flight crew be suitably qualified to operate on the intended route or procedure. Those requirements should be complemented by common airspace usage requirements specifying the corresponding flight procedures and routes.

(4) The implementation of PBN in high-density terminal manoeuvring areas, as required by Commission Implementing Regulation (EU) No 716/2014 ([7]), is expected to improve the precision of approach trajectory and facilitate traffic sequencing at an earlier stage, so that fuel consumption and environmental impact in descent and arrival phases can be reduced. In order to facilitate implementation, the requirements of this Regulation should be consistent with those of Implementing Regulation (EU) No 716/2014.

([1]) OJ L 79, 13.3.2008, p. 1.
([2]) ICAO Doc 9750.
([3]) Commission Implementing Regulation (EU) No 409/2013 of 3 May 2013 on the definition of common projects, the establishment of governance and the identification of incentives supporting the implementation of the European Air Traffic Management Master Plan (OJ L 123, 4.5.2013, p. 1).
([4]) Commission Implementing Regulation (EU) No 923/2012 of 26 September 2012 laying down the common rules of the air and operational provisions regarding services and procedures in air navigation and amending Implementing Regulation (EU) No 1035/2011 and Regulations (EC) No 1265/2007, (EC) No 1794/2006, (EC) No 730/2006, (EC) No 1033/2006 and (EU) No 255/2010 (OJ L 281, 13.10.2012, p. 1).
([5]) Commission Regulation (EU) No 965/2012 of 5 October 2012 laying down technical requirements and administrative procedures related to air operations pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council (OJ L 296, 25.10.2012, p. 1).
([6]) Commission Regulation (EU) No 452/2014 of 29 April 2014 laying down technical requirements and administrative procedures related to air operations of third country operators pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council (OJ L 133, 6.5.2014, p. 12).
([7]) Commission Implementing Regulation (EU) No 716/2014 of 27 June 2014 on the establishment of the Pilot Common Project supporting the implementation of the European Air Traffic Management Master Plan (OJ L 190, 28.6.2014, p. 19).

(5) The use of satellite-based augmentation systems (SBASs), in particular in the form of the European Geostationary Navigation Overlay Service (EGNOS), should be promoted, as safety and cost-efficiency considerations support the establishment of localiser performance with vertical guidance (LPV) minima approaches. However, operations with other PBN capabilities should be facilitated by providing for other minima in addition to LPV.

(6) When developing the European Route Network Improvement Plan, the Network Manager referred to in Commission Regulation (EU) No 677/2011 ([1]) is, pursuant to that Regulation, to rely on a cooperative decision-making process. Accordingly, in relation to the provision of ATM/ANS in accordance with this Regulation, the Network Manager should coordinate with the providers of ATM/ANS, in particular in order to ensure that ATS routes used for the purpose of transitioning to or from the en route network are consistent with the specification of the standard instrument departure (SID) routes and standard instrument arrival (STAR) routes served.

(7) The requirements for providers of ATM/ANS concerning the implementation of PBN set out in this Regulation should include, in particular, appropriate requirements for the implementation at all instrument runway ends of 3D approach procedures and, where those providers have established SID routes or STAR routes, the implementation of those routes. However, imposing those requirements could in certain situations have serious adverse consequences which outweigh the potential safety, capacity and efficiency benefits. Therefore, providers of ATM/ANS should in those situations be entitled to deviate from those requirements and instead be made subject to certain alternative requirements which are better suited for those specific situations, while still achieving those benefits as much as possible.

(8) Furthermore, in the interest of a safe and smooth transition, providers of ATM/ANS should be allowed to provide their services also through other means than using PBN in accordance with the requirements of this Regulation for a reasonable time period. However, they should no longer be allowed to do so, other than by means of contingency measures, from 1 June 2030, in light of the need to rationalise ATM/ANS provision and avoid unnecessary costs, in particular to airspace users, resulting from the existence of multiple layers of navigation infrastructure.

(9) In the interest of safety, a smooth and coordinated transition should be ensured to the provision of ATM/ANS using performance-based navigation in accordance with the requirements of this Regulation. Providers of ATM/ANS should therefore take, in a timely and effective manner, all necessary measures to that aim. Those measures should include the establishment of a transition plan, which each provider should keep up-to-date so as to take account of all relevant developments relating to the transition. Those transition plans, and any updates thereof which are significant in that they entail substantial changes to the plans and are capable of materially affecting the interests of interested parties, should be established after a process of consultation of interested parties, in order to ensure that their views are taken into account where appropriate, and after approval by the competent authority, in order to ensure compliance with the requirements set out in this Regulation and in particular Article 4(1).

(10) Exceptionally, situations may arise where, after the implementation of the PBN requirements laid down in this Regulation, it proves impossible for providers of ATM/ANS, for unexpected reasons beyond their control, to provide their services in accordance with those requirements. Without prejudice to the obligation on those providers to take all reasonable measures lying within their control to prevent such situations from arising and to restore compliance with those requirements as soon as possible when such situations nonetheless arises, they should therefore be required to take the necessary contingency measures for the continued, safe provision of their services through other means, in particular by using conventional navigation procedures.

(11) It is necessary to allow sufficient time for the parties concerned to comply with this Regulation. The requirement regarding the exclusive use of PBN should apply from an appropriate later date, so as to allow for sufficient time for a safe and smooth transition. In addition, certain provisions of the Annex should also apply from an appropriate later date, in light of the additional time needed for the parties concerned to adapt to the requirements in question.

(12) The measures provided for in this Regulation are based on the opinion issued by the European Aviation Safety Agency in accordance with point (b) of Article 17(2) and Article 19(1) of Regulation (EC) No 216/2008.

(13) The measures provided in this Regulation are in accordance with the opinion of the Committee established by Article 5 of Regulation (EC) No 549/2004 of the European Parliament and of the Council ([2]),

([1]) Commission Regulation (EU) No 677/2011 of 7 July 2011 laying down detailed rules for the implementation of air traffic management (ATM) network functions and amending Regulation (EU) No 691/2010 (OJ L 185, 15.7.2011, p. 1).

([2]) Regulation (EC) No 549/2004 of the European Parliament and of the Council of 10 March 2004 laying down the framework for the creation of the single European sky (the framework Regulation) (OJ L 96, 31.3.2004, p. 1).

HAS ADOPTED THIS REGULATION:

Article 1

Subject matter and scope

1. This Regulation lays down airspace usage requirements and operating procedures concerning performance-based navigation.

2. This Regulation applies to providers of air traffic management/air navigation services (ATM/ANS), and operators of aerodromes (hereinafter 'providers of ATM/ANS') that are responsible for putting in place instrument approach procedures or air traffic service (ATS) routes, where they provide their services in the following airspace:

(a) above the territory to which the Treaty applies;

(b) any other airspace where Member States are responsible for the provision of air navigation services in accordance with Article 1(3) of Regulation (EC) No 551/2004 of the European Parliament and of the Council ([1]).

Article 2

Definitions

For the purposes of this Regulation, the following definitions shall apply:

(1) 'performance based navigation (PBN)' means performance based navigation as defined in Article 2(5) of Regulation (EU) No 965/2012;

(2) 'ATS route' means ATS route as defined in Article 2(46) of Implementing Regulation (EU) No 923/2012;

(3) 'instrument approach procedure' means instrument approach procedure as defined in Article 2(90) of Implementing Regulation (EU) No 923/2012;

(4) 'conventional navigation procedures' means ATS routes and instrument approach procedures predicated on the use of ground-based navigation aids that do not enable compliance with the PBN requirements set out in this Regulation;

(5) 'instrument runway' means instrument runway as defined in Annex I, point 22 of Commission Regulation (EU) No 139/2014 ([2]);

(6) 'navigation specification' means a set of requirements for aircraft and aircrew needed to support performance-based navigation operations within a defined airspace;

(7) 'required navigation performance (RNP) X specification' means a navigation specification based on area navigation that includes the requirement for on-board performance monitoring and alerting, whereby 'X' refers to the lateral navigation accuracy in nautical miles or the operation type and required functionalities;

(8) 'lateral navigation (LNAV)', 'lateral navigation/vertical navigation (LNAV/VNAV)' and 'localizer performance with vertical guidance (LPV)' mean the labels to identify the different types of operating minima on approach charts depicting approach procedures based on Global Navigation Satellite Systems (GNSS) which are classified as RNP approaches (RNP APCH);

(9) 'radius to fix (RF)' means a constant radius circular path about a defined turn centre that terminates at a fixed point;

(10) '2D approach' means an instrument approach procedure, classified as an non-precision approach procedure, as defined in Article 2(90) of Implementing Regulation (EU) No 923/2012;

(11) '3D approach' means an instrument approach procedure, classified as an approach with vertical guidance or a precision approach, as defined in Article 2(90) of Implementing Regulation (EU) No 923/2012;

(12) 'satellite-based augmentation system (SBAS)' means a wide-coverage augmentation system in which the user of a GNSS receives augmentation information from a satellite-based transmitter;

([1]) Regulation (EC) No 551/2004 of the European Parliament and of the Council of 10 March 2004 on the organisation and use of the airspace in the single European sky (the airspace Regulation) (OJ L 96, 31.3.2004, p. 20).

([2]) Commission Regulation (EU) No 139/2014 of 12 February 2014 laying down requirements and administrative procedures related to aerodromes pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council (OJ L 44, 14.2.2014, p. 1).

(13) 'area navigation (RNAV) X specification' means a navigation specification based on area navigation that does not include the requirement for on-board performance monitoring and alerting, whereby 'X' refers to the lateral navigation accuracy in nautical miles;

(14) 'standard instrument arrival (STAR) route' means a designated instrument flight rule arrival route linking a significant point, normally on an air traffic service (ATS) route, with a point at which a published instrument approach procedure can be commenced;

(15) 'standard instrument departure (SID) route' means a designated instrument flight rule departure route linking the aerodrome with a specified significant point, normally on a designated ATS route, at which the en route phase of a flight commences;

(16) 'navigation functionality' means the detailed capability of the navigation system required to meet the needs of the proposed operations in the airspace.

Article 3

PBN requirements

Providers of ATM/ANS shall comply with the requirements for the implementation of performance-based navigation set out in Subpart PBN of the Annex.

Article 4

Transitional measures

1. Providers of ATM/ANS shall take the necessary measures to ensure a smooth and safe transition to the provision of their services using performance-based navigation in accordance with Article 3.

Those measures shall include the establishment and implementation of a transition plan. Providers of ATM/ANS shall keep their transition plan up-to-date.

The transition plan shall be consistent with the European ATM Master Plan and the common projects referred to in Article 15a of Regulation (EC) No 550/2004 of the European Parliament and of the Council ([1]).

2. Providers of ATM/ANS shall consult all of the following parties on the draft transition plan and the draft of any significant updates thereof and take account of their views where appropriate:

(a) aerodrome operators, airspace users and representative organisations of such airspace users affected by the provision of their services;

(b) the Network Manager referred to in Article 3(1) of Regulation (EU) No 677/2011;

(c) providers of ATM/ANS that provide their services in adjacent airspace blocks.

3. After having carried out the consultation referred to in paragraph 2, providers of ATM/ANS shall submit the results of the consultation, as well as the draft transition plan, or the draft significant update thereof, for approval to the competent authority responsible for the airspace concerned.

That competent authority shall verify whether the draft transition plan, or the draft significant update thereof, complies with the requirements of this Regulation and in particular whether it takes account of the views of airspace users where appropriate, including those operating State aircraft. Member State of the competent authority may provide that such verification shall be carried out in coordination with other relevant authorities of the Member State concerned.

That competent authority shall inform the providers of ATM/ANS of the outcome of that verification without undue delay. Providers of ATM/ANS shall not establish or implement the transition plan, or the significant update thereof, before having been informed by that competent authority that it has approved the draft transition plan or draft significant update thereof.

([1]) Regulation (EC) No 550/2004 of the European Parliament and of the Council of 10 March 2004 on the provision of air navigation services in the single European sky (the service provision Regulation) (OJ L 96, 31.3.2004, p. 10).

Article 5

Exclusive use of PBN

1. Providers of ATM/ANS shall not provide their services using conventional navigation procedures, or using performance-based navigation which is not in accordance with the requirements of point AUR.PBN.2005 of the Annex.

2. Paragraph 1 shall be without prejudice to Article 6 and to the possibility of providers of ATM/ANS to provide their services using landing systems enabling CAT II, CAT IIIA or CAT IIIB operations within the meaning of points 14, 15 and 16, respectively, of Annex I to Regulation (EU) No 965/2012.

Article 6

Contingency measures

Providers of ATM/ANS shall take the necessary measures to ensure that they remain capable of providing their services through other means where, for unexpected reasons beyond their control, GNSS or other methods used for performance-based navigation are no longer available, making it impossible for them to provide their services in accordance with Article 3. Those measures shall include, in particular, retaining a network of conventional navigation aids and related surveillance and communications infrastructure.

Article 7

Entry into force and application

1. This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

2. This Regulation shall apply from 3 December 2020.

However, by way of derogation from the first subparagraph:

(a) Article 5 shall apply from 6 June 2030;

(b) for aerodromes listed in point 1.2.1 of the Annex to Implementing Regulation (EU) No 716/2014 and for instrument runway ends served by precision approach procedures at other aerodromes, point AUR.PBN.2005(1) of the Annex shall apply from 25 January 2024;

(c) for all instrument runway ends, point AUR.PBN.2005(4) of the Annex shall apply from 25 January 2024 with respect to one SID or STAR route established and from 6 June 2030 with respect to all SID or STAR routes established;

(d) for ATS routes below FL 150, point AUR.PBN.2005(6) of the Annex shall apply from 25 January 2024.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 18 July 2018.

For the Commission

The President

Jean-Claude JUNCKER

ANNEX

SUBPART PBN — Performance-based navigation

AUR.PBN.1005 Subject-matter

In accordance with Article 3, this Subpart sets out the requirements for the implementation of performance-based navigation (PBN) to be complied with by providers of ATM/ANS.

AUR.PBN.2005 Routes and procedures

(1) Providers of ATM/ANS shall implement, at all instrument runway ends, approach procedures in accordance with the requirements of the RNP approach (RNP APCH) specification, including LNAV, LNAV/VNAV and LPV minima and, where required due to traffic density or traffic complexity, radius to fix (RF) legs.

(2) By way of derogation from point (1), at instrument runway ends where, due to terrain, obstacles or air traffic separation conditions, the implementation of 3D approach procedures is excessively difficult, providers of ATM/ANS shall implement 2D approach procedures in accordance with the requirements of the RNP approach (RNP APCH) specification. In that case, they may also, in addition to the implementation of those 2D approach procedures, implement 3D approach procedures in accordance with the requirements of the RNP authorisation required (RNP AR APCH) specification.

(3) By way of derogation from point (1) at instrument runway ends without an appropriate SBAS coverage, providers of ATM/ANS shall implement RNP APCH procedures, including LNAV and LNAV/VNAV minima. Providers of ATM/ANS shall also implement LPV minima at those instrument runway ends, no later than 18 months from the date at which such appropriate SBAS coverage is available.

(4) Where providers of ATM/ANS have established SID routes or STAR routes, they shall implement those routes in accordance with the requirements of RNAV 1 specification.

(5) By way of derogation from point (4), where providers of ATM/ANS have established SID routes or STAR routes and where higher performance requirements than those referred to in that point are required in order to maintain air traffic capacity and safety in environments with high traffic density, traffic complexity or terrain features, they shall implement those routes in accordance with the requirements of the RNP 1 specification, including one or more of the following additional navigation functionalities:

   (a) operations along a vertical path and between two fixes and with the use of:

      (i) an 'AT' altitude constraint;

      (ii) an 'AT OR ABOVE' altitude constraint;

      (iii) an 'AT OR BELOW' altitude constraint;

      (iv) a 'WINDOW' constraint;

   (b) the radius to fix (RF) leg.

(6) Where providers of ATM/ANS have established ATS routes for en route operations, they shall implement those routes in accordance with the requirements of the RNAV 5 specification.

(7) By way of derogation from points (4) and (6), where providers of ATM/ANS have established ATS routes, SID routes or STAR routes for rotorcraft operations, they shall implement those routes in accordance with the requirements of the RNP 0.3, RNAV 1 or RNP 1 specifications. In that case, they shall be entitled to decide which of those three sets of requirements they comply with.