



## Terms of Reference

for a rulemaking task

# Performance-Based Navigation (PBN) implementation in the European Air Traffic Management Network (EATMN)

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<b>Applicability</b>		<b>Process map</b>	
Affected regulations and decisions:	Commission Regulation (EU) No 1332/2011; ED Decision 2012/002/R	Rulemaking lead:	R5
Affected stakeholders:	Member States; ATM/ANS providers; aerodrome operators	Concept Paper:	No
Driver/origin:	Legal requirements (EU Mandate for PBN Operations); Pilot Common Project proposal	Rulemaking group:	No
Reference:	MOVE E2/EMM D(2011) dated 6 April 2011. SSC/13/52/7.	RIA type:	Full
		Technical consultation during NPA drafting:	Yes
		Publication date of the NPA:	2014/Q3
		Duration of NPA consultation:	3 months
		Review group:	No
		Focussed consultation:	TBD
		Publication date of the Opinion:	2015/Q1
		Publication date of the Decision:	2015/Q4

## 1. Issue and reasoning for regulatory change

The continued growth of aviation places increasing demands on operational efficiency, thus emphasising the need for optimum utilisation of the available airspace. Improved operational efficiency and airspace utilisation, derived from the application of Performance-Based Navigation (PBN), has been demonstrated to bring capacity benefits through the optimisation of ATS routes and approach procedures. PBN is also one of the underpinning operational concepts that is being implemented worldwide as part of the Global Air Navigation Plan (GANP).

PBN offers a number of advantages over the conventional sensor-specific methods of developing routes and approach procedures. For instance, PBN:

- (a) reduces the need to maintain sensor-specific routes and procedures, and their associated costs;
- (b) avoids the need for development of sensor-specific operations. The expansion of satellite navigation services is expected to contribute to the continued diversity of PBN operations. The original basic Global Navigation Satellite System (GNSS) equipment is evolving due to the development of augmentations such as the Satellite-Based Augmentation System (SBAS) and the Ground-Based Augmentation System (GBAS);
- (c) allows for more efficient use of airspace (route placement, fuel efficiency, noise abatement, etc.), in particular in the terminal areas;
- (d) clarifies the way in which Area Navigation (RNAV) and Required Navigation Performance (RNP) systems are used.

Through the continued development and improvement of the available technology, ICAO has recently published a revision to Document 9613 'Performance Based Navigation Manual'. This revision introduces a number of new navigation specifications that can be used by regions or States depending upon their operational needs.

In order to ensure an efficient, harmonised and safe implementation of PBN in Europe, that supports the improved performance of the European Air Traffic Management Network (EATMN), the uniform use of PBN specifications and functionalities is critical. The optimal and safe use of airspace and the improved safe access to aerodromes through the improved airspace design, arrival/departure routes and approach procedures would be ensured based on a common application of navigation specifications and functionalities.

Each State, ATM/ANS provider or aerodrome implementing a navigation specification and functionality of their choice would lead to a fragmented, inefficient and unsafe PBN implementation in the European airspace. It is, therefore, necessary to harmonise the approach and reduce the number of options that may be applied. To achieve a safe and efficient PBN implementation in the EATMN, regulatory measures are therefore required. These regulatory measures should define the ICAO PBN navigation specifications and functionalities that are to be used in the European airspace and the dates by which they are to be applied.

## 2. Objectives

To ensure the safe, efficient and harmonised implementation of specific PBN specifications and functionality in the EATMN.

### 3. Activities

During the development of the draft regulatory provisions, to be introduced in a new subpart addressing PBN to the existing Airspace Usage Regulation (Commission Regulation (EU) No 1332/2011), and the appropriate means of compliance, EASA will take due regard of the European concept for PBN operations. The regulatory provisions will build on the consultation previously undertaken by EUROCONTROL, in coordination with EASA, as part of its mandate to develop a Single European Sky interoperability implementing regulation. The conclusions resulting from the EUROCONTROL consultation have been listed in EUROCONTROL's Regulatory Approach Document, including the preliminary impact assessment (ref para 7.3(c)).

### 4. Deliverables

- (a) An Opinion for an amendment to Commission Regulation (EU) No 1332/2011 of 16 December 2011 laying down common airspace usage requirements and operating procedures for airborne collision avoidance<sup>1</sup> for the introduction of a new subpart addressing PBN.
- (b) A Decision amending Decision 2012/002/R of the Executive Director of the Agency of 8 March 2012 on the Acceptable Means of Compliance and Guidance Material for Common Airspace Usage Requirements and Operating Procedures 'AMC/GM to AUR'.

### 5. Interface issues

The draft PBN implementation regulatory provisions will define the navigation specifications and functionalities that are to be used in the European airspace and the dates by which they are to be applied to meet the local performance objectives and those established by Commission Implementing Regulation (EU) No 390/2013<sup>2</sup>. The draft provisions shall be developed to be consistent with the ATM Functionality AF#1 – Extended AMAN and PBN in high density TMAs – in the "Pilot Common Project" supporting the implementation of the European Air Traffic Management Master Plan.

The draft regulatory provisions developed by this rulemaking task, will take due consideration of the EASA draft provisions stemming from the following rulemaking tasks (RMT's) currently in progress that contribute significantly to a successful and safe PBN implementations.

- (a) RMT.0256 (*MDM.062(a) former OPS.013(a)*) (*MDM.062(b) former OPS.013(b)*) 'Revision of operational approval criteria for PBN' - impacts Part FCL of the Aircrew regulation and Part SPA of the OPS IR;
- (b) RMT.0445 'Technical requirements and operation procedures for airspace design including procedure design' - creates a new Part as proposed in NPA 2013-08 of 10th May 2013 to contain the PBN requirements for airspace design (ASD) including procedure design;
- (c) RMT.0477 'Technical requirement and operation procedures for AIS/AIM';
- (d) RMT.0519 'Provision of requirements in support of global PBN operations' – primarily populating the Navigation part of the CS ACNS with the airworthiness criteria corresponding to the different PBN specifications;
- (e) RMT.0593 'Technical requirements and operational procedures for the provision of data (DAT) for airspace users for the purpose of air navigation'.

<sup>1</sup> OJ L 336, 20.12.2011, p. 20.

<sup>2</sup> Commission Implementing Regulation (EU) No 390/2013 of 3 May 2013 laying down a performance scheme for air navigation services and network functions (OJ L 128, 9.5.2013, p. 1).

## 6. Focussed consultation

A focussed consultation is envisaged to be organised, prior to or shortly after the publication of the NPA.

## 7. Annex I: Reference documents

### 7.1. Affected regulations

Commission Regulation (EU) No 1332/2011 of 16 December 2011 laying down common airspace usage requirements and operating procedures for airborne collision avoidance (OJ L 336, 20.12.2011, p. 20).

### 7.2. Affected decisions

Decision 2012/002/R of the Executive Director of the Agency of 8 March 2012 on the Acceptable Means of Compliance and Guidance Material for Common Airspace Usage Requirements and Operating Procedures 'AMC/GM to AUR'.

### 7.3. Reference documents

- (a) Mandate to EUROCONTROL to assist the European Commission in the development of an interoperability implementing rule on Performance-Based Navigation (PBN), letter MOVE E2/EMM D(2011), 6 April 2011.
- (b) Single European Sky (SES) Regulations. Regulatory approach for the draft Interoperability Implementing Rule on Performance-Based Navigation, March 2013, Edition 1.0.
- (c) Regulation (EC) No 552/2004 of the European Parliament and of the Council of 10 March 2004 on the interoperability of the European Air Traffic Management network (the interoperability Regulation) (OJ L 96, 31.3.2004, p. 26), as last amended by Regulation (EC) No 1070/2009 of the European Parliament and of the Council of 21 October 2009.
- (d) ICAO Assembly Resolution A37-11 — Performance-based navigation global goals, November 2010.
- (e) ICAO Doc 9613 — Performance-Based Navigation (PBN) Manual, Fourth Edition, 2012.
- (f) ICAO Doc 9750 — Global Air Navigation Plan 2013-2028.
- (g) European Airspace Concept Handbook for PBN Implementation.
- (h) SSC/13/52/7 52nd SINGLE SKY COMMITTEE 17/18 December 2013 SESAR Deployment — draft Commission Implementing Regulation on PCP.
- (i) SSC/14/53/4 53rd SINGLE SKY COMMITTEE 2/3 April 2014 SESAR Deployment—draft Implementing Regulation on the Pilot Common Project (PCP)
- (j) Commission Implementing Regulation (EU) No 390/2013 of 3 May 2013 laying down a performance scheme for air navigation services and network functions (OJ L 128, 9.3.2013, p. 1).