



WORKING PAPER

TWELFTH AIR NAVIGATION CONFERENCE

Montréal, 19 to 30 November 2012

Agenda Item 3: Interoperability and data – through globally interoperable system-wide information management (SWIM)

3.2: Improved operational performance through flight and flow – information for a collaborative environment

**THE REQUIREMENT FOR AN INTERIM UPDATE TO THE FLIGHT PLAN
TO SUPPORT THE TIMELY IMPLEMENTATION OF THE PBN CONCEPT**

(Presented by the Presidency of the European Union on behalf of the European Union and its Member States¹; by the other Member States of the European Civil Aviation Conference²; and by the Member States of EUROCONTROL)

SUMMARY

This paper addresses the issue of new codes for navigation specifications which are included in the *Performance-based Navigation (PBN) Manual* (Doc 9613). These codes are not included in the FPL 2012 and it is proposed that an amendment to the *Procedures for Air Navigation Services – Air Traffic Management* (PANS-ATM, Doc 4444) be developed to include these new codes, bringing benefits and enhancing flight operations.

Action: The Conference is invited to agree to the recommendation in paragraph 4.

1. INTRODUCTION

1.1 The flight and flow – information for a collaborative environment (FF-ICE) concept document Version 1.0 was agreed by the Air Traffic Management Requirement and Performance Panel (ATMRPP) on 22 November 2010. The final implementation of FF-ICE is expected in ASBU Block 3 (implementation 2023 and beyond), and it is highly unlikely that any early implementation of parts of FF-ICE would be in place before 2018. Meanwhile, an unedited advanced version of the new edition of the performance-based navigation (PBN) Manual (Doc 9613) has been made available before this Conference.

¹ Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and United Kingdom. All these 27 States are also Members of ECAC.

² Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Croatia, Georgia, Iceland, Moldova, Monaco, Montenegro, Norway, San Marino, Serbia, Switzerland, The former Yugoslav Republic of Macedonia, Turkey and Ukraine.

1.2 To maximize the benefits of the introduction of the PBN concept, there is a strong requirement to ensure that the information provided in the flight plan reflects the ability to operate on ATS routes having a PBN designation. The selection of the PBN specification(s) for a specific area or type of operation has to be decided based on airspace design, and in consultation with the airspace users.

2. DISCUSSION

2.1 The need for worldwide harmonization of PBN requirements, standards, procedures and practices underpins ICAO's PBN Concept. Such international interoperability requires common flight management system (FMS) functionality associated with a particular navigation performance. Examples of such FMS functionalities, which ensure predictable and repeatable PBN procedures, include fixed radius transitions (FRT), the radius-to-fix path terminator (RF), required time of arrival (RTA), tactical parallel offset, improved vertical navigation capability and time control, etc.

2.2 PBN aims to ensure global interoperability and to put an end to the proliferation of navigation specifications by publishing a set of internationally standardised navigation specifications in the PBN Manual. To this end, the PBN Manual (Doc 9613) was published in 2008 containing eight navigation specifications, and a new edition of Doc 9613 is due to be published in 2012. This updated Manual will contain, inter alia, three new navigation specifications i.e. Advanced RNP, RNP 2 and RNP 0.3.

2.3 At present, the 2012 flight plan contains only those codes for navigation specifications that were published in the 2008 edition of the PBN Manual i.e. codes for the three new navigation specifications are not included. Noting that the navigation specifications are included in the FPL 2012 under Item 18 after the prefix PBN/, and that it is specified in FPL 2012 under PBN/ that "combinations of alphanumeric characters not indicated above are reserved", with no amendment to FPL 2012, it would only be possible to include these codes after the prefix NAV/, "as required by the appropriate authority".

2.4 The problems that might arise from such a solution include (but are not limited to):

- a) a lack of global or even regional harmonisation as regards flight plan coding, which would stand in stark contrast to the PBN Concept which has successfully pursued such harmonisation of navigation specifications. (At worst, the same navigation specification may be identified by different free text coding in different ICAO Regions);
- b) extraction of data from free text fields is unreliable, subject to error and therefore introduces safety risks; and
- c) possible truncation.

2.5 As a consequence, flights might not receive the quality of service that their actual capability permits, or conversely might cause additional workload/burden to ATC when aircraft performance capability does not meet the level that is expected. At worst, the flight plan may be rejected and delays incurred by operators.

2.6 It can also be argued that the use of the NAV/ designator for the new navigation specifications would in the long run be more expensive to implement than the inclusion of new codes under PBN/, for the reason that extractions from within free text are more difficult and, in addition, more prone to error. In context, 'errors' could result in the issuance of an incorrect clearance by ATC.

2.7 The navigation specifications are intended to be used in a standardized manner globally, and as such each navigation specification published in the PBN Manual needs codes in the ATS flight plan. This could of course be achieved through the *Regional Supplementary Procedures* (SUPPs, Doc 7030) but, considering the global nature of the codes, together with the requirement to do away with regional proliferation of NAV specs, this would not be optimal.

2.8 To introduce these new navigation specifications in the flight plan it is necessary to create new PBN codes under Item 18 in the medium term and, for the longer term, new Item 10 codes. It is therefore proposed that an amendment to PANS-ATM be prepared to include all PBN codes for all navigation specifications included in the new (2012) edition of the PBN Manual (Doc 9613) with an applicability date in the 2014 timeframe.

3. RECOMMENDATION

3.1 The Conference is invited to request ICAO to develop proposals for the implementation of all performance-based navigation codes into the flight plan in the year 2014 timeframe, which would bring benefits and enhance flight operations.

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