



PBN Implementation Workshop / PBN Go-Team

Tunis, Tunisia

24-28 February 2014



SUMMARY OF DISCUSSIONS

I. General

1. Place and Duration

The PBN Implementation Workshop/PBN Go-Team was successfully held in Tunis, Tunisia, 24-28 February 2014. The event was organized by ICAO (EUR and MID) with the support of EUROCONTROL and hosted by the Tunisian Civil Aviation Authority.

2. Attendance

The workshop was attended by 63 representatives from States' regulators, airspace planners, procedure designers, air traffic controllers and Communication, Navigation and Surveillance (CNS) experts, airlines and International Organizations. The list of participants is at **Attachment A** to this Summary.

3. Agenda

The agenda was developed around the main following topics:

1. ICAO PBN objectives and plans.
2. What is Area Navigation?
3. Introduction to PBN.
4. Overview of PBN specifications.
5. Overview of PBN specifications.
6. What is an Airspace concept?
7. Case study.
8. Design airspace.
9. Nav specs and procedure design.
10. Design airspace volumes.
11. Validation and implementation.
12. Group final presentation.
13. Presentations on practical examples of implementation.
14. PBN ATCO training issues.
15. Designer training and procedure design issues. Quality assurance process and oversight.
16. GNSS / BLUEMED.
17. EUROMED GNSS II/MEDUSA project.
18. Presentations by Tunisia.
19. Wrap-up and Closing.

A copy of the detailed Agenda/Work Programme is available at the ICAO MID Regional Website.

From extensive feedback it was confirmed that the Agenda was well balanced, informative and interesting and that it met the expectations of the participants.

4. Objective

The purpose of the Workshop/Go Team was to support States in enhancing their PBN capabilities in order to improve the Global and Regional PBN implementation. Moreover, the Workshop/Go Team aimed to assess the status of the PBN implementation in Tunisia and provide a list of recommendations to foster the PBN implementation.

II. Summary and Outcome of Discussions

The Workshop provided a balance between the time allocated to presentations covering the PBN Airspace Concept and a forum for open discussions, exchange of knowledge and experience. Much thought and effort had been put into the development of the presentations by the speakers who have been thanked for the time and effort they dedicated to the Workshop/Go Team and the enthusiasm and commitment to their subjects.

All the presentations are available at: http://www.icao.int/MID/Pages/2014/PBN_Workshop.aspx

The sessions were grouped into four (4) main Topics as follows:

1. The concept of airspace planning, PBN and the use of PBN in airspace management

The objective of these sessions was to provide an overview of the development of a PBN Airspace Concept and to introduce the EUROCONTROL 'European Airspace Concept Handbook for PBN Implementation' and the methodology to be used in developing such concepts.

Presentations were delivered by Mrs. Franca Pavlicevic, Head of Navigation & CNS Research Unit and Mr. Charlie Eliot, Senior ATM Training Expert, from Eurocontrol.

2. Case Study

During these sessions the participants were divided into two groups, to apply the PBN concept in airspace planning, on a generic module, which provided an opportunity for effective discussions and more understandings of PBN, ATM operations and airspace management.

The Case Study was concluded with presentations of proposals by each group.

3. Go Team Expert presentations

During these sessions five presentations were delivered as follows:

- Presentations on practical examples of implementation, Mr. Frank Lumnitzer, Director Procedure design and aviation consulting, Aviaconsult;
- PBN ATCO training issues, Mr. Bertrand Foucher, ATM expert, ENAC;
- Designer training, procedure design issues, quality assurance process and oversight, Mr. David Szymanski, Head of PANS-OPS Office, ENAC;
- GNSS / BLUEMED, Mr. Patrizio VANNI, GNSS Expert, ENAV S.p.A; and

- EUROMED GNSS II/MEDUSA project, Mrs. Antonella Di Fazio, Coordinator, EUROMED GNSS II MEDUSA Project.

4. PBN implementation in Tunisia

During this session Mr. Radhouan Aissaoui, Head of Air Navigation Studies Department, Office de l'Aviation Civile et des Aéroports (OACA), Tunisia, presented the PBN implementation status in Tunisia and the challenges they are facing.

Mr. Mohamed Smaoui, ICAO MID Regional Office Deputy Regional Director, presented the outcome of the Go Team visit to Tunisia, as follows:

General planning and implementation issues:

- a) Assessment of DME-DME infrastructure coverage.
- b) Establish/amend regulations to require a GNSS interference assessment as part of regular flight inspections and validations and GNSS recording for post implementation monitoring.
- c) Expedite the PBN operational approvals of the national operators.
- d) Initiate PBN SIDs/STARs implementation taking into consideration continuous operations (CCO and CDO).
- e) Take necessary measures to implement Assembly Resolution 37-11 in a timely manner (APV).
- f) Ensure that flight validation is carried out for new procedures.
- g) Implement e-TOD for Area 1 and eventually for Area 4 if Cat II is planned.
- h) Ensure that ATM systems support PBN implementation.
- i) Ensure that operators, ATCOs and oversight authorities are trained on PBN.
- j) Align the chart naming by 2022 in accordance with the new ICAO requirements on charting for PBN.
- k) Reinforce the multidisciplinary approach to PBN implementation.

Specific AIP related issues:

- a) Navigation specifications and applications need to be specified in the AIP.
- b) RNAV approach procedures referencing to VOR/DME sensors shall be corrected/deleted.
- c) A difference filed in AIP GEN 1.7 related to Annex 2 Chapter 5 5.1.2 needs to be clarified. Otherwise, this would not permit use of RNAV1, RNAV2, RNP1, RNP2, and RNP4.

- d) AIC IFR NR04/05 Act of the “Ministre du Transport“ N° 574 dated on 30/11/2004, establishing the requirements applicable to the installation of GPS equipment on-board aircraft for the use in Tunisian airspace should be verified to clarify the following:
- Include AIC IFR 04/05 regulation in AIP
 - Recheck article 8 in order to allow GPS as standalone sensor in terminal airspace
 - Recheck article 10 point B – there is no need to have a GPS based approach procedure published by state of registry
 - Recheck article 11 point C – BRNAV is set in context to RAIM which is not correct
 - Recheck article 12 – LPV procedures would not be possible
- e) AIC IFR NR04/05 Act of the “Ministre du Transport“ N° 574 dated on 30/11/2004, establishing the requirements applicable to the installation of GPS equipment on-board aircraft for the use in Tunisian airspace should be verified to clarify the following:
- Recheck article 15 – Migrate terms “GPS standalone” to meet requirements for “RNP APCH”.
- f) AIC IFR NR16/05 Act of the “order of the Minister of Transport N°157 dated on 31/08/2005, related to the airworthiness and operational approval for RNP-4 operations in RNP- 4 airspace should be verified to clarify the following:
- Recheck applicability of RNP4 AIC IFR as RNP4 is a specification designated for use in oceanic/remote areas.
 - Refer to PBN Manual ICAO Doc 9613.
- g) AIC IFR NR06/07 Act of the “order of the Minister of Transport N°164 dated on 06/12/2006, laying down the requirements for the implementation of Basic RNAV (B-RNAV) in Tunisian airspace should be verified to clarify the following:
- Recheck applicability and correctness of AIC
 - Verify the correct use of RNP with RNAV terms.

Next Steps

- a) An updated national PBN Plan should be made available to ICAO at the earliest convenience not later than 31 December 2014.
- b) Follow-up actions will be undertaken in close cooperation between ICAO and Tunisia as required.

III. Closing

The participants were provided with a Certificate of Attendance.

The importance of gathering all stakeholders and providing forums for discussion of PBN issues was highlighted. In this respect, the participants expressed their gratitude to ICAO for organizing the PBN Workshop and to Tunisia for hosting the Workshop in Tunis; and invited ICAO to continue on this pace and organize more PBN Workshops.

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Attachment A

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