International Civil Aviation Organization

THE SEVENTH MEETING OF PERFORMANCE BASED NAVIGATION IMPLEMENTATION COORDINATION GROUP (PBNICG/7)

(Video conference, 21 – 23 October 2020)

Agenda Item 4: States' PBN Implementation Progress

VIET NAM PBN IMPLEMENTATION PROGRESS

(Presented by Viet Nam)

SUMMARY

This paper presents Viet Nam PBN implementation progress from 2016.

1. INTRODUCTION

1.1 Viet Nam developed its PBN Implementation Plan in 2016 to orient PBN application and time-frame as the basis for PBN implementation within Ha Noi and Ho Chi Minh FIRs. The plan was updated to the latest version in 2019.

1.2 While new ATS routes have been established using RNAV 2, the upgrade of conventional ATS routes system is being studied for implementation to meet requirements from all stakeholders.

1.3 PBN flight procedures have been implemented at 7/22 aerodromes and the number will reach 13/22 aerodromes by 2021.

2. DISCUSSION

2.1 Viet Nam PBN Implementation Progress

a) En-routes:
- 4 RNAV 10 (RNP 10) oceanic ATS routes: L625, L642, M771, N892.
- 7 RNAV 5 continental ATS routes (since 2016): Q1, Q2, Q3, Q4, Q5, Q6, Q7.
- 5 RNAV 2 continental ATS routes (since 2018): N639, Q10, Q11, Q12, Q14.

b) TMA (SIDs, STARS):
- RNAV 1 SIDs/STARs were implemented at 3/22 aerodromes including: Tan Son Nhat (2016), Noi Bai (2017), Da Nang (2017).
- RNP 1 SIDs/STARs were implemented at 4/22 aerodromes including: Cam Ranh (2017), Phu Bai (2018), Phu Quoc (2019), Van Don (2020).

c) Approach:

- RNP APCHs were implemented at 5/22 aerodromes including: Cam Ranh (2017), Phu Bai (2018), Tan Son Nhat (2019), Phu Quoc (2019), Van Don (2020).

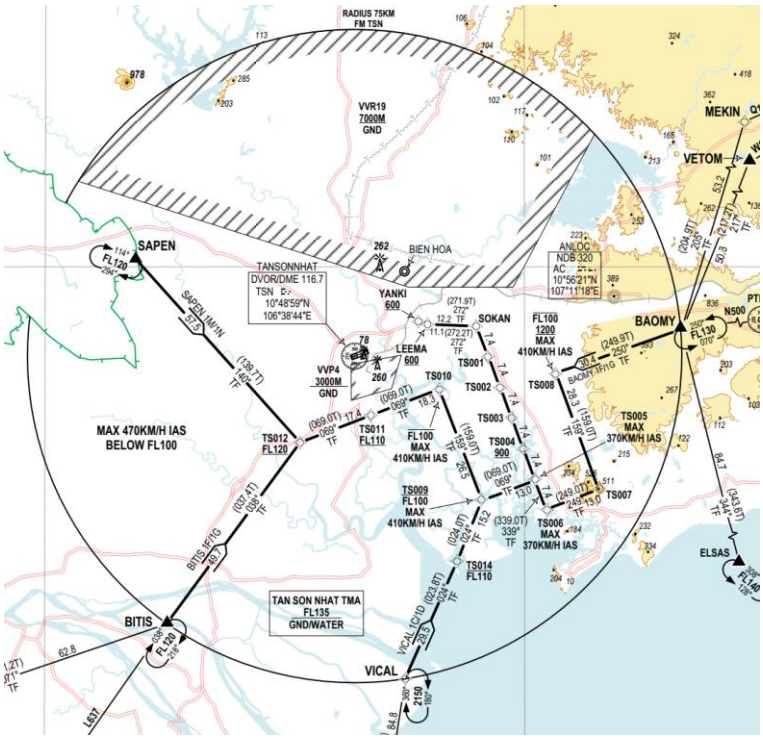
d) Way forward:

- PBN SIDs/STARs/APCHs are going to be published for implementation at 6 aerodromes in 2020-2021 including: Cat Bi, Can Tho, Vinh, Phu Cat, Buon Ma Thuot, Lien Khuong.

- Viet Nam expects to complete PBN implementation for TMAs and aerodromes by 2023.

2.2 Tan Son Nhat Intl Airport Project between NAVBLUE/Airbus and Viet Nam Air Traffic Management Corporation (VATM)

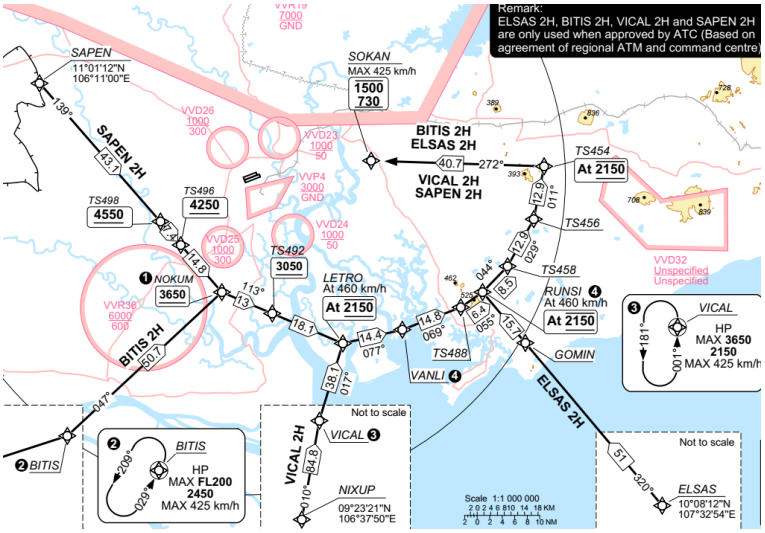
- RNAV 1 SIDs/STARs (Trombone model) were first implemented at Tan Son Nhat Intl Airport on 10th November 2016. The procedures aim to resolve potentially conflicting traffic flows by the use of specific routings, levels and speed restrictions.



RNAV 1 SIDs/STARs (Trombone model)

- In December 2016, VATM and NAVBLUE/Airbus launched Vietnam ATM Cooperation Program which includes an optimization project for flight operation at Tan Son Nhat Intl Airport with the aim of improving capacity and efficiency of the airport as well as its airspace which is under the pressure of rapid air traffic growth.

- New PBN procedures (Point Merge System model) and new TMA sectorization and configuration at Tan Son Nhat Intl Airport were published with effective date from 10 October 2019.



RNAV 1 SIDs/STARs (Point Merge System model)

- According to the post implementation review after 1 year, the project appears to have been a success with improvements in virtually all areas of the operation. The improvements achieved are noted as:

• The average number of operations per hour for Tan Son Nhat has increased.
• Unscheduled holding appears to have been significantly reduced.
• Radio transmissions have been reduced.
• ATCOs reported that peak sector workload has been reduced.
• ATCOs were positive about the change and no ATCO stated a desire to return to the previous operation.

2.3 Difficulties and lesson learnt

- Airlines fleet operating at Viet Nam have not caught up to the PBN implementation plan in terms of navigation specification approvals, particularly RNAV 2, RNP 2 and RNP APCH. Many aircraft are approved for RNAV 1 and RNP 1 but lack of RNP APCH, consequently ATCOs must assign conventional flight procedures to the non-capable aircraft instead of allowing them to fly PBN STARs which connect to RNP APCHs. This issue leads to mixed navigation environments and makes ATM more complicated.

- To achieve good design practice of PBN SIDs/STARs, flight procedure designers have to segregate departures latterally and vertically from arrivals for the sake of safety and efficiency. Many transition routes connecting PBN procedures to the ATS routes network lie outside of CTRs, TMAs and ATS routes corridors. ANSPs and the design team should cooperate with the military unit who is in charge of airspace management to get their approval in the early stages of design.

3. ACTION REQUIRED BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this papers; and
b) discuss any relevant matters as appropriate.

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