



ICAO

International Civil Aviation Organization

First Meeting of the APAC Project 30/10 Task Force

Tangerang, Indonesia, 16 – 18 June 2026

Agenda Item 2: States Challenges and Implementation Plan

IDENTIFYING THE TECHNICAL AND OPERATIONAL ENABLERS FOR SUCCESSFUL IMPLEMENTATION OF OPTIMIZED LONGITUDINAL SEPARATION MINIMA

(Presented by Pakistan)

SUMMARY

This paper presents some generic as well as Pakistan specific technical and operational enablers identified by Pakistan which are necessary to be addressed in the work programme of Project 30/10 Task Force for harmonized implementation of optimized longitudinal separation minima in APAC Region.

1. INTRODUCTION

1.1 14th Air Navigation Conference (AN-Conf/14) while deliberating enhanced operational efficiency of the global air navigation system, adopted Recommendation 3.1/1 Project 30/10 demanding States and ICAO to take initiative for harmonized / seamless implementation of longitudinal separation of 30 NM in oceanic / remote airspace and 10 NM elsewhere.

1.2 APAC ATM SG/13 recognized the necessity for development of regional action plan in APAC region for implementation of Project 30/10 and its harmonization with adjacent regions and considered the proposal for establishment of Project 30/10 Task force. Based on the endorsement of ATM SG/13, the subsequent meeting of APANPIRG agreed to Decision 36/7 for establishment of APAC Project 30/10 Task Force under the ATM SG to translate the global recommendation of AN-Conf/14 into a Regional Implementation Plan.

1.3 In order to develop regional implementation plan for optimized separation, the Task Force is required to carry out comprehensive analysis of current separation minima being used in APAC States and to identify the technical and operational enablers which would allow for the use of seamless optimized separation minima within region.

1.4 This paper presents Pakistan's perspective on the current situation of use of separation minima in Pakistan as well as identify various aspects which are required to be addressed for implementation of optimized longitudinal separation minima within Pakistan as well as with adjoining states. It is expected that guidance developed by the Task Force for implementation of technical and operational enablers will help Pakistan and other States.

2. DISCUSSION

Current Infrastructure / Separation in Pakistan

2.1 Pakistan has established facilities to support surveillance-based air traffic services in its entire territory as well as over the portion of Arabian Sea in Karachi FIR / SRR where Pakistan is providing air navigation services. The facilities include a network of Mode S SSRs along with VHF frequencies. To provide redundancy of ATS surveillance as well as to cover the gaps, ADS-B stations have been provided. The entire Pakistan airspace is therefore covered under ATS surveillance as well as Direct Controller Pilot Communication except a small portion of airspace at the interface of Lahore and Urumqi FIR where topographic constraints restrict the coverage. Currently Pakistan is applying surveillance-based separation minima of 15 NM for enroute and 5 NM for terminal within its airspace. Pakistan is studying the option to apply 10NM surveillance-based minima within its airspace based on the recommendation of AN-Conf/14 and has full intent to support the project by addressing the limitations within own domain.

Pakistan's Airspace Situation

2.2 Pakistan is situated on the ICAO APAC Region boundary sharing western boundaries with Muscat and Tehran FIRs in MID Region and Afghanistan in APAC region. Towards South and East, it has interface with Mumbai and Delhi FIR while towards North, there is connectivity with Urumqi FIR. Pakistan's airspace supports multiple traffic flows which includes major traffic flows between Far East and Europe and beyond, as well as between Middle East to North / Central Asia.

2.3 Number of major ATS Routes overflying the region and ultimately overflying Kabul FIR (e.g. L750, M874, A466) were earlier designated as RNP 10. Some of the ATS routes entering Pakistan through Arabian Sea were also designated as RNP 10. Longitudinal separation of 50 NM was earlier implemented on these routes and is still applicable on some parts. However, due to non-availability of air traffic services within Kabul FIR, longitudinal separation of 15 minutes is applicable for aircraft which overfly Kabul FIR. Earlier Separation Minima of 50NM was applicable at Transfer of Control Points with Kabul and the same is still applicable on Transfer of Control points with India in Delhi and Mumbai FIRs. During the implementation of project, the separation of 10NM over continental TCPs and 30NM over oceanic TCPs may become practicable; however, longitudinal separation for transfer of control with Kabul FIR need specific study based on future plans of Afghanistan for provision of air navigation services. Any regional guidance for States affected by non-harmonized ATS environments until normal air navigation services are restored would be beneficial for such States.

2.4 With regard to separation applicable with Muscat and Tehran at the interface with MID Region, Pakistan is using 5 minutes longitudinal separation with Muscat ACC for more than 30 years based on surveillance. Pakistan and Oman are now in agreement to apply 30NM separation minima based on the surveillance. The operational trials for use of 30NM separation along with AIDC are being planned. The separation will subsequently be implemented. The challenge identified which Karachi ACC might face is acceptance of traffic with longitudinal separation of 30NM from Muscat and its subsequent transfer with required separation of 50NM at Transfer of Control Points with Indian airspace. In such scenario, few operators might lose the optimum cruising level to ensure 50NM separation while transferring to Indian TCPs. Pakistan has already initiated the case to reduce separation at Indian TCPs to 30NM. Pakistan also intends to consider this separation of 30NM in subsequent phase with Tehran when the situation of availability of airspace within Tehran FIR is improved and operators opt to use it.

Requirement of CNS Facilities

2.5 The provision of 10NM longitudinal separation is based on the provision of ATS using surveillance facility. This requires supporting infrastructure including redundant surveillance using

allowed sensors, Direct Controller Pilot Voice communication as well as ATM system for processing surveillance and flight plan data. The supporting infrastructure of VHF and ATM should be capable of supporting the facilities required for provision of ATS in all sectors of an Area Control Centre. In the same context, the longitudinal separation minima of 30NM in oceanic and remote airspace is based on Performance Based Operations using RNP 4 or 2 with RCP 240 and RSP 180 with maximum ADS-C periodic reporting interval of 12 minutes. This would ultimately require availability of CPDLC and ADS-C in respective ACCs. The guidance on minimum technical requirements for required performance / redundancy for 10NM separation may be helpful for States.

2.6 While States have obligation under Article 28 for the provision of air navigation facilities, the provision of such facilities are normally arranged by air navigation service providers with expectations of cost recovery by imposition of air navigation service charges. The ICAO Global Air Navigation Planning concept also indicates that requirement of Aviation Safety Block Upgrades should be determined by States with cost-benefit analysis a factor. In areas of low traffic density, the provision of required facilities for implementation of 30/10NM longitudinal separation, as applicable, will therefore remain a question to be answered based on business plan and cost benefit analysis by air navigation service provider.

ACC Sectorization

2.7 ICAO framework provides some guidance on the sectorization of ACC which mainly covers the configuration of ATS routes, geographical distribution of traffic, availability of CNS-ATM facilities and capacity of ATS personnel. Although not covered in the guidance, it is believed that while providing the area control service using ATS surveillance, the sector size and applicable separation minima could be important factors. If the area to be scanned under the control of one ACC sector using surveillance facility is significantly large, the provision of ATS with lower separation minima could be a challenge. Further guidance regarding sector complexity indicators, traffic density thresholds, and controller workload assessment criteria and sector dimensions would assist States in determining operational suitability for implementation of optimized longitudinal separation minima.

Current ADS-B Surveillance Issues

2.8 The ongoing GNSS Radio Frequency Interference is a global challenge to aviation industry. With the geo-political instability in some regions, the issue of GNSS RFI is continuously escalating. While the ICAO framework allows the same separation minima based on any sensor i.e. radar, ADS-B and/or MLAT, the application of surveillance-based separation in areas where surveillance is based on ADS-B alone and GNSS RFI events are being reported may result in disruption of surveillance-based air traffic services. This aspect is also required to be considered by the States which have such environment.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) consider the development of guidance material to address highlighted aspects in the work programme of the Task Force so as to facilitate States in implementation of 30/10 NM longitudinal separation minima; and
- c) discuss any relevant matters as appropriate.

— END —