International Civil Aviation Organization

Tenth Meeting of the Air Traffic Management Sub-Group (ATM/SG/10) of APANPIRG

Video Teleconference, 17 – 21 October 2022

Agenda Item 6: ATM Coordination (Meetings, Route Development, Contingency Planning)

UPDATE ON TRIALS FOR APPLICATION OF 10 MINUTES SEPARATION ON CROSSING TRACKS OVER OCEANIC AIRSPACE IN MUMBAI FLIGHT INFORMATION REGION

(Presented by Airports Authority of India)

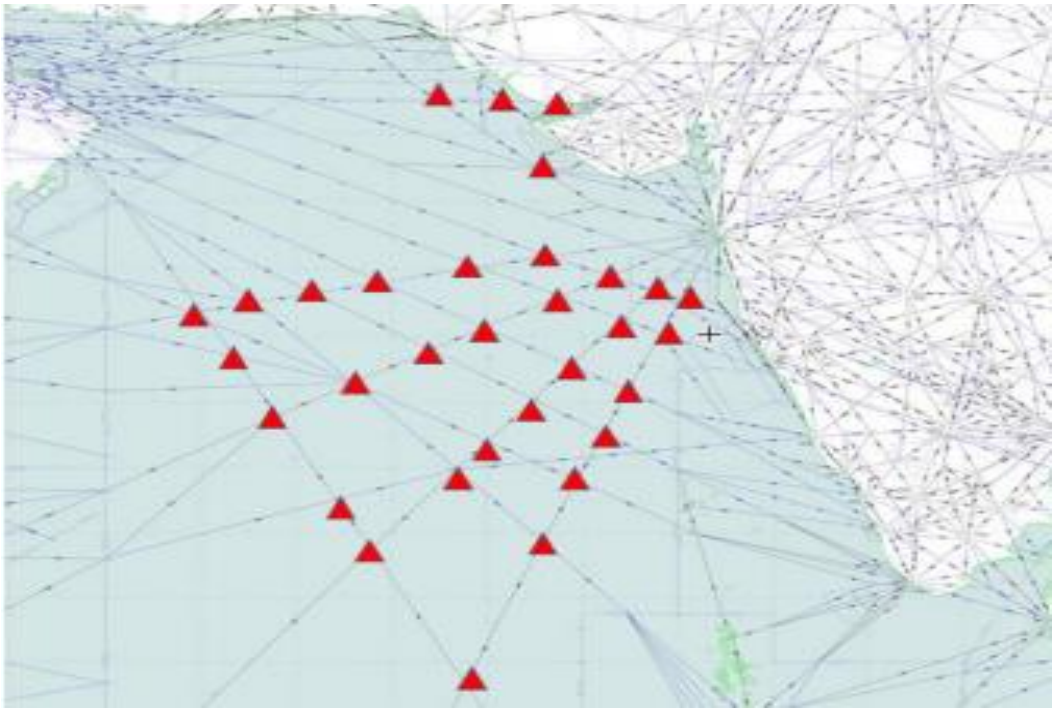
SUMMARY

Airports Authority of India conducted trails on the application of 10 minutes separation on crossing tracks on opportunity basis between ADS-B equipped aircraft under Space Based ADS-B (SB ADS-B) Surveillance in the Oceanic Airspace of Mumbai FIR. This paper presents update on the trials.

1. INTRODUCTION

1.1 Airports Authority of India presented a Working Paper (WP09) in 'The First Meeting of the South Asia, Indian Ocean and Southeast Asia ATM Coordination Group (SAIOSEACG/1)' conducted via Video Teleconference from 28March – 01 April 2022 on the proposal to introduce application of 10 minutes separation on crossing tracks on opportunity basis between ADS-B equipped aircraft under Space Based ADS-B Surveillance in the Oceanic Airspace of Mumbai FIR which are in contact on CPDLC/HF/VHF with Mumbai OCC.

1.2 This paper presents an update on the trials undertaken for the same.



2. DISCUSSION

2.1 The complex network of RNAV ATS Routes caters to the predominant traffic flows from and to airports between South-East Asia and the Middle East and beyond. In addition RNAV and Conventional ATS Routes providing connectivity between the Indian sub-continent and the African coastline results into about 31 crossing way points over high seas areas within Mumbai FIR.

2.2 Prior to the induction of SB ADS-B surveillance in Mumbai Oceanic Airspace, 15 minutes separation minima between aircraft maintaining same level, climbing or descending, flying on crossing tracks was being applied.

2.3 The induction of SB ADS-B track data in the Mumbai ATS Automation System enables presentation of a realistic and very reliable air traffic situation through a display of SB ADS-B tracks – **the position, level and speed of which are updated every 8 seconds**.

2.4 In view of the availability of various supporting automation tools such as Min Sep, RBL, PTL, System calculated Way point Estimates and Ground Speed, MTCD Alerts etc., and with enhanced situational awareness on the Air Traffic thru SB ADS-B, as discussed in the WP/09 of SAIOSEACG/1, trials were carried out for application of 10 minutes Separation minima over the crossing way points in respect of participating aircraft connected on CPDLC, or on HF/VHF.

2.5 These trials were carried out from 1st May, 2022 up to 31st July, 2022 to assess the number of instances where the benefits of reduced crossing time separation could be accrued for the industry without compromising safety.

2.6 During the said period of trials, reduced crossing time separation was utilized at least 51 times between 102 participating aircraft wherein the estimated crossing time values varied from a figure of ’14’ minutes to ‘10’ minutes. This reduced separation minima thereby enabled flights at user preferred flight levels leading to reduced fuel burns and consequent emissions. It may be noted that the application of reduced crossing time separation would also have resulted in eliminating further conflicts thereby furthered the flight efficiency and reduce Controllers’ Workload. Additionally, the aforementioned figure of ‘51’ is just indicative, as the actual figure would be higher since the ATCOs may have missed recording a few such instances.

2.7 During the period of these trials, safety related issues reported or observed were NIL.

2.8 Encouraged by the outcome of initial trials, the same are extended for a further period of three months up to the 31st of October, 2022. The indicative data is encouraging as well and about 154 aircraft have participated in the recorded 77 instances of crossing traffic till 26.09.2022.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper; and

b) discuss any relevant matters as appropriate.

…….

<table>
<tr><td colspan="3">Draft Conclusion/Decision ATM/SG/10-X: TITLE</td></tr>
<tr><td colspan="2">What: ICAO APAC recognizes use of Space Based ADS-B derived position of aircraft for frequent determination of position of aircraft in oceanic airspace towards application of 10 minutes separation on crossing tracks as per Doc 4444 Para 5.4.2.2.1.2 (b)</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☒ Economic
☒ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: Assignment of optimum Flight Level for Aircraft more often leading to fuel saving and CO2 reduction.</td><td colspan="2">Follow-up: ☐Required from States</td></tr>
<tr><td>When: 1-Nov-22</td><td colspan="2">Status: Draft to be adopted by Subgroup</td></tr>
<tr><td colspan="3">Who: ☒Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other:</td></tr>
</table>