Combined ASIOACG/9 and INSPIRE/5 Meeting, 2014

Dubai, UAE, 12th to 14th November 2014

Agenda Item 3: ATM issues

AIRSPACE CAPACITY ENHANCEMENT THROUGH RHS

(Presented by Airports Authority of India)

SUMMARY

This working paper presents the details of enhancement of airspace capacity through application of RHS. It also presents the plans and proposals for uniform application of these separation minima in the BOBASIO region to multiply manifold the benefits to the airspace users.

1. INTRODUCTION

1.1 Asia and Pacific region has been recognized internationally for registering the fastest growth rates in aviation. Consequently, there is a need to address and meet the demands of this growth by providing efficient and environmentally sustainable air space management solutions. India has taken notable initiatives for enhancing airspace capacity within its airspace and urges neighboring ANSPs to effectively implement RHS in BOBASIO region.

2. DISCUSSION

2.1 The introduction of EMARSSH routes, RVSM and BOB-CAT contributed significantly to the enhancement of airspace capacity and efficiency in the South Asia Region. EMARSSH project provided an RNP10 application in the lateral plane of 50NM. Subsequently, many new RNP10 ATS routes or segments thereof were introduced in the region. The EMARSSH project envisaged that the RNP 10 operations will yield significantly due to its capability to reduce longitudinal separation to 50NM.

2.2 The Bay of Bengal ATS Coordination Group formed the Bay Of Bengal Reduced Horizontal Separation Task Force in 2009 for implementing Reduced Horizontal Separation in the Bay of Bengal & Arabian Sea airspace. BOB-RHS/TF decided to implement 50 NM Reduced Longitudinal Separation in a phased manner along RNP10 routes.

2.3 In adherence to the decisions and conclusions of BOB-RHS/TF, in 2011, India established an Enroute Monitoring Agency to meet the ICAO provisions for implementing 50NM longitudinal separation. Accordingly, India introduced the application of 50NM longitudinal separation minima between RNP 10 approved aircraft meeting Direct Controller Pilot Communication (DCPC) requirements through

CPDLC or two way VHF communication on those segments of the RNAV (RNP10) Routes which fall within the Chennai, Mumbai, Kolkata and Delhi FIRs in two phases as below:

PHASE-I

1	P762	between DUGOS and LULDA
2	N571	East Bound between PARAR and IDASO,
		West bound between IGOGU and PARAR

PHASE – II

3	L301	between RINDA and RASKI
4	L507	between TEBOV and CEA
5	L509	between GAYA and ASARI
6	L510	between EMRAN and IBANI
7	L759	between MIPAK and DPN
8	M300	between ATETA and LOTAV
9	M770	between MEPEL and JJS
10	N563	between MEMAK and REXOD
11	N877	between LAGOG and PRA
12	N895	between SAGOD and PARTY
13	P570	between BASUR and KITAL
14	P574	between NOPEK and TOTOX
15	P628	between IGREX and VIKIT
16	P646	between IBITA and BBN

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2.4 India has implemented 30 NM Longitudinal Separation between RNP4 approved aircraft on opportunity basis on four ATS routes viz., N571, M300, P570 and P574 w.e.f 18th September, 2014

2.5 The data link capability of Yangon, Kuala Lumpur, Chennai, Kolkata, and Mumbai enables continuous surveillance for FANS1/A aircraft. Muscat FIR to the west of Mumbai FIR has uninterrupted Radar coverage right up to and beyond the common boundary with Mumbai FIR. Colombo, Mauritius & Australia have data link capability in IO airspace and Male is likely to commission its ADS-C/CPDLC systems soon. This presents an opportunity to implement 50 Nm and 30 Nm longitudinal separations throughout Oceanic Airspaces not only of AS & IO but also BOB.

2.6 The substantial number of aircraft over AS and BOB (about 40-30 percent) that do not have FANS 1A data link capability pose limitations, nevertheless even the opportunity base application of RHS will significantly enhance the capacity of Oceanic airspaces and efficiency of traffic flows and reduce emissions.

2.7 Asia/Pacific Seamless ATM Plan Version 1.0, June 2013 published by the ICAO Asia and Pacific Office, Bangkok recommends RNP 4, RNP 10 (RNAV 10) (other acceptable navigation specifications – RNP 2 oceanic) for Category R Airspace

2.8 The application of 50 Nm longitudinal separation requires,

Navigation requirement: RNP10
Communication requirement: Direct Controller Pilot Communication (VHF/CPDLC)
Surveillance: Position report every 24 minutes via CPDLC or 27 minutes via ADS-C

The application of 30 Nm longitudinal separation requires,
Navigation requirement: RNP4
Communication requirement: Direct Controller Pilot Communication (VHF/CPDLC)
Surveillance: Position report every 17 minutes via ADS-C

2.6 With advanced avionics, state-of-the-art ATM systems with integrated ADS/CPDLC and AIDC capabilities, there is an opportunity, in the region, for enhancement of airspace capacity through RHS.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) work closely together to identify and prioritize ATS routes for implementation of RHS across FIR boundaries

b) identify point of contacts and coordinators

c) revise LOA(s) for the implementation of RHS

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