



*International Civil Aviation Organization*

**The Seventh Meeting of the ICAO Bay of Bengal Reduced Horizontal Separation Implementation Task Force (BOB-RHS/TF/7)**

Bangkok, Thailand, 21 May 2012

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**Agenda Item 4: Review Current Southeast Asia Operations and Identify Problem Areas**

**Post implementation Analysis on 50Nm RLS in BOBASIO Region**

(Presented by Airports Authority of India)

**SUMMARY**

This paper presents the problems identified in implementing 50NM RLS and the proposed solution to the states to consider for bringing in seamless flow across BOBASIO region. This paper relates to –

**Strategic Objectives:**

- A: *Safety – Enhance global civil aviation safety*
- C: *Environmental Protection and Sustainable Development of Air Transport – Foster harmonized and economically viable development of international civil aviation that does not unduly harm the environment*

**Global Plan Initiatives:**

- GPI-1 Flexible use of airspace
- GPI-3 Harmonization of level systems
- GPI-6 Air traffic flow management
- GPI-7 Dynamic and flexible ATS route management
- GPI-8 Collaborative airspace design and management
- GPI-17 Data link applications
- GPI-22 Communication infrastructure

**1. INTRODUCTION**

The first phase of the Bay of Bengal Reduced Horizontal Separation (BOB-RHS) project was implemented on 30 June 2011. Due to operational issues, 50 NM RHS could be implemented only on two routes (N571 and P762) out of the proposed four routes. The second Phase of the 50 NM RLS was planned to implement from 15<sup>th</sup> December 2012 on the majority of RNP10 routes transiting through Bay of Bengal, Arabian Sea and routes transiting through Kabul FIR.

## 2. DISCUSSION

### 2.1 RNP10 ATS routes identified to have been implemented in Phase 2

The table below indicates where 50 NM longitudinal separation was proposed in BOB-RHS/TF06 meeting to be introduced in Phase 2:

<b>FIR</b>	<b>Phase 2A Routes (implementation date 15<sup>th</sup> December 2011)</b>
Chennai	P570, M300, N563, P574, N877, L759, L510
Delhi	L759, P646, L509
Kolkata	L759, M770, L301, N895, P646, L507, L509, L510
Mumbai	P570, M300, N877, L759, L301, N895
Kuala Lumpur	P574, L759, M770, P628, L510, N571
Bangkok	L759, M770, L301, P646, L507
Muscat	P570, M300, N563, P574, L301
Tehran	UL333, P628 (subject to Ashgabat)
Yangon	L759, M770, L301, N895, P646, L507
Kabul	N636, UL333, P628
	<b>Phase 2B Routes (implementation date 12<sup>th</sup> January 2012)</b>
Jakarta	P570, M300, N563, P574
Kabul	A466 (M875), N644, L750, G796 (L509)
	<b>Phase 2C Routes (implementation date 8<sup>th</sup> March 2012)</b>
Colombo	P570, M300
	<b>TBN</b>
Karachi	N895, N636, UL333, P628
Lahore	L750, N644, A466, L509

- 2.2 In Indian FIRs 50 NM longitudinal separation has been implemented on all 14 routes in Phase 2A as decided in BOB-RHS/TF06 meeting. These routes are P570, M300, N563, P574, N877, L759, L510, L759, P646, L509, M770, L301, N895 and L507 in Kolkata, Delhi, Chennai and Mumbai FIR.

#### Routes entering Muscat FIR from Mumbai FIR

- 2.3 On routes P570, M300, N563, P574 and L301, LOA between AAI and Meteorology and Air Navigation Authority of Oman was signed for implementation of 50 NM longitudinal separation. However, Muscat expressed certain difficulty in implementing application of 50 NM longitudinal separation hence had to be kept in abeyance. Oman informed that a large number of aircraft was not equipped with CPDLC and Muscat controllers are not in a position to keep track on equipage manually since their automation system is not capable of presenting the same to the controllers.
- 2.4 In the recently concluded BOBASIO/02 meeting India and Oman discussed this issue to find a solution for commencing 50 NM RLS in the Arabian Sea region. After a long deliberation both the countries agreed to the following:

- a) India would present data for business case study to enable Oman to conduct SMS. Accordingly India provided the data to Muscat.
- b) Oman agreed to indicate from the date of receipt of the data, as to how many number of pairs of west bound flights with 50 NM RLS could be accepted per hour or for any specific period of duration in a day on ATS routes M300, P574 and L301 at points LOTAV, TOTOX and RASKI respectively. Oman is still working on this.
- c) India has also agreed to work out the conditions for accepting 50 NM RLS for east bound flights on L301 (RASKI) within two weeks. India is still working on this.
- d) AIDC operational testing between Muscat and Mumbai is planned to commence by first week of June 2012. Point of contact for this purpose had been established between two states.
- e) It was also agreed that Oman will provide a list of aircraft operating in Arabian Sea but not equipped with CPDLC to IATA for analysis and adoption of further strategy.

#### Routes entering Colombo FIR from Chennai FIR

- 2.5 The date of commencement of 50 NM longitudinal separation was 8<sup>th</sup> March 2012 on routes P570 and M300, as per APAC plan. Sri Lanka (Colombo FIR) agreed to the plan in BOB-RHS/TF/6 meeting but expressed that they might look for some time to ensure readiness of all its internal requirements. However Sri Lanka could not participate in the phase 2 RLS implementation.

#### Routes entering Lahore FIR from Delhi FIR

- 2.6 India and Pakistan have implemented 50 NM RLS on L509 with effect from 12th January 2012 between 1900 and 2130 at or above F320 with mutual coordination. An LOA has been signed between India and Pakistan. In a special coordination meeting between Afghanistan, India, Pakistan and IATA, Pakistan proposed to extend the availability of L509 in Lahore FIR from 5 hours to 9 hours (i.e.) between 1500 and 2359 UTC. To this effect CAA Pakistan issued an A-series NOTAM (A0271/12), indicating that L509 is made available from 1500-2359 at or above F300 and the availability of F280 between 1900 and 2359 UTC from 5th April 2012. India is also considering the extension of the timings to include BOBCAT hours and the discussions are on with Indian military authorities.
- 2.7 The meeting was informed that India and Pakistan mutually agreed through e-mail to introduce 50 NM RLS on two more routes, viz., M875 and L333 which were not part of APAC plan. No agreement could be reached as these routes pass through Indian military airspace and the timings restriction on these routes in India.
- 2.8 India also offered to provide connectivity from PRA to SERKA for west bound flight through A325/B210 and N893/G208. India is exploring the possibility of declaring A325 as bi-directional to accommodate east bound flights on this route. With the existing route structure, India was ready to accept east bound aircraft with 50 NM RHS via TELEM on route N893.

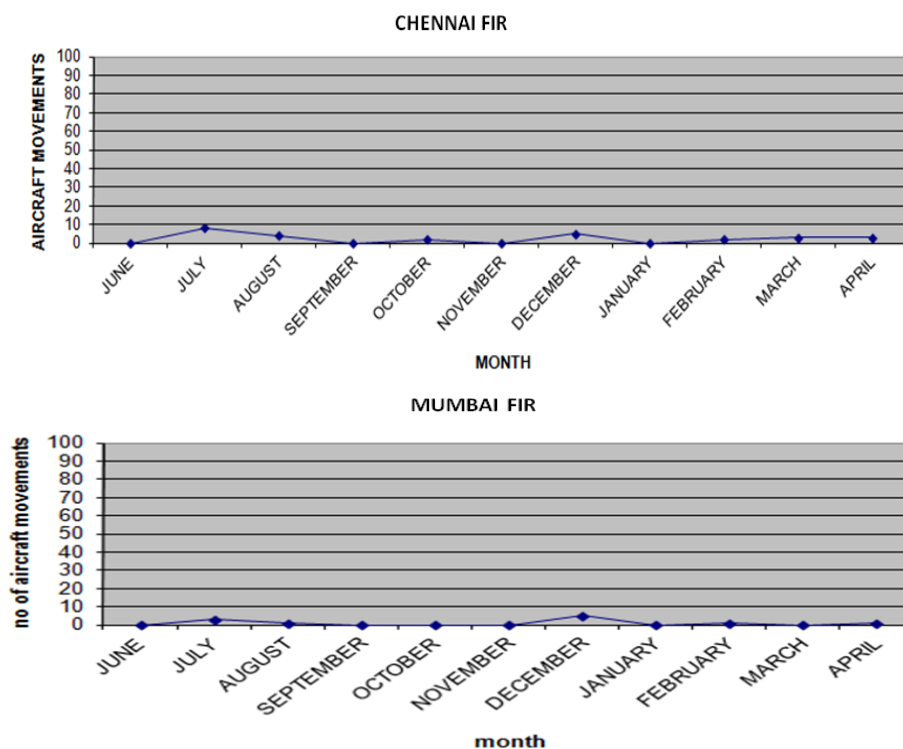
#### Routes entering Jakarta FIR from Chennai FIR

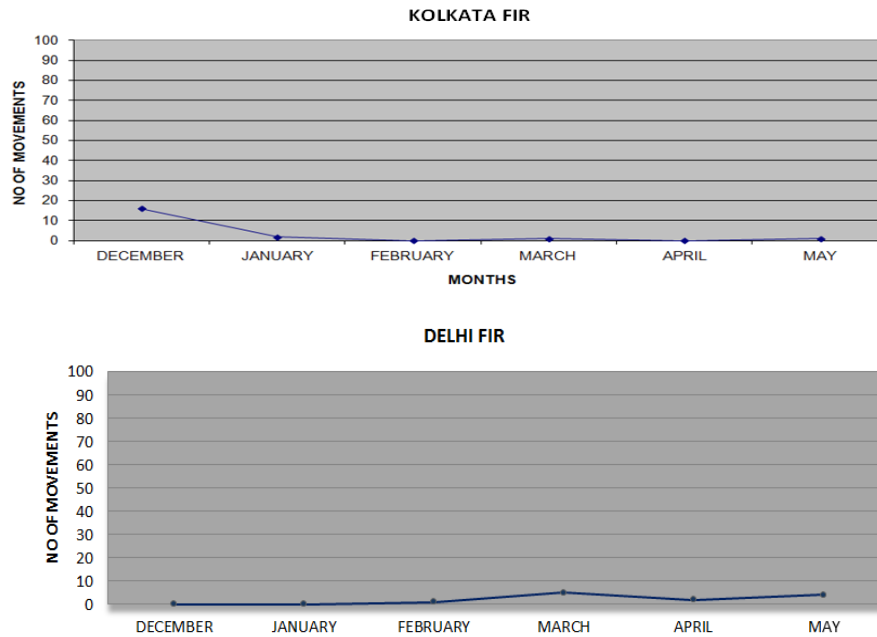
- 2.9 P570 and M300 are originating from Jakarta FIR transiting through Colombo FIR, hence participation of Indonesia (Jakarta FIR) is essential in implementation of 50 NM RLS to achieve seamless flow of traffic to/from Middle East to South East Asia. As per APAC plan, 50 NM RHS should have been implemented between India and Indonesia on routes N563 and P574 from 12<sup>th</sup> January 2012. However India, Malaysia, Indonesia and Sri Lanka are in the

process of finalizing the LOA and the date of implementation of 50NM RLS on these four routes.

2.10 The following problems have been identified on analyzing the post implementation scenario of 50Nm RLS:

- Lack of Synchronization of date of implementation of RLS on same route
- Inadequate Air/Ground communication(less percentage of data link equipped aircraft and limited VHF coverage) in the area under consideration
- Reluctant to accept aircraft with 50NM RLS and clears few aircraft on case to case basis.
- Staggered availability of route timings in different states due to military airspace restriction.
- Non-RNAV route segments within RNP 10 routes selected for 50NM RLS
- Formation of pairs of aircraft equipped with CPDLC.
- ANSPs transitioning from old to new ATM automation system, having interoperability issues either within or with adjacent ANSPs.
- The results on business case study in the pre-implementation stage indicated that there could be at least 30 aircraft pair per month and that was the encouraging factor to the states. However it is very saddening to note (ref: graphical picture) that the number of aircraft pair in the last few months did not go beyond ten pair in all the four FIRs.





### 2.11 The suggested solution to the States and to the airlines operators

- ✓ Common date of implementation after taking due consensus from the states involved
- ✓ Aircraft equipage(CPDLC)
- ✓ Coordination with military authorities by the states to have synchronized timings
- ✓ Conversion of Non-RNAV segments to RNP10 routes to have seamless flow
- ✓ To consider after states Report on stability of ATM automation system and the settlement of inter-operability issues.

## 3. ACTION BY THE MEETING

### 3.1 The meeting is invited to:

- a) note the information contained in this paper; and
- b) discuss on the identified problems and the suggested solutions.

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