



*International Civil Aviation Organization*

**The First Meeting of the South Asia/Indian Ocean ATM Coordination Group (SAIOACG/1)**

Bangkok, Thailand, 19 – 23 September 2011

**Agenda Item 4: Safety Analysis and Airspace Monitoring Issues**

**Bay of Bengal Arabian Sea Indian Ocean Monitoring Agency – EMA, India**

(Presented by India)

**SUMMARY**

This paper presents the process of establishment of En-route Monitoring Agency for the Bay of Bengal Arabian Sea region and the activities related to the implementation of Reduced Longitudinal Separation Minima.

**1. INTRODUCTION**

- 1.1 In the BBACG/20 meeting held in January 2009 ICAO desired to implement 50NM longitudinal separation in the Bay of Bengal Arabian sea region and established the Bay of Bengal Reduced Horizontal Separations Task Force. ICAO also recognized the necessity for a formal monitoring program, on a sub-regional basis for lateral and longitudinal navigation errors in the Bay of Bengal to support implementation of Reduced Horizontal plane separation and that limitations in the availability of Safety Monitoring services would hinder implementation.
- 1.2 In the first meeting of the Bay of Bengal Reduced Horizontal Separation Task Force (BOB-RHS/TF/1) held from 2<sup>nd</sup> to 6<sup>th</sup> November 2009 India accepted the responsibility of establishing an En-route Monitoring Agency (EMA).

**2. DISCUSSION**

- 2.1 According to EMA Handbook the Responsibilities and Standardized Practices of En-route Monitoring Agencies are:-
  - Establishment and Maintenance of database of PBN and other Approvals.
  - Monitoring of Horizontal Plane Navigation Performance.
  - Conducting Safety Assessments and Reporting Results.
  - Monitoring Operator Compliance with State Approval Requirements.
  - Remedial Actions
  - Review of Operational Concept.

- 2.2 Airports Authority of India entered into a formal arrangement with Indian Statistical Institute, New Delhi for assistance in Statistical analysis and collision risk modelling. Both the officials of AAI & ISI made a formal visit to SEASMA (South East Asia Safety Monitoring Agency) in Singapore in May 2010, for a preliminary study on the working of an EMA. Another set of officials from AAI, ISI & DGCA visited FAA EMA (PARMO) at Atlantic City, USA in August 2010.
- 2.3 Airports Authority of India established the Bay Of Bengal Arabian Sea Monitoring Agency (BOBASMA) at Chennai. BOBASMA started functioning from New ATS complex, Chennai Airport, Chennai.
- 2.4 Operational LOAs for Monitoring of Aircraft Navigation Errors have been sent by India, to all States involved in the requested data collection for their agreement and signature. Pakistan, Myanmar, Srilanka and Muscat have signed LOAs. Malaysia and Maldives will sign the LOAs soon. India wishes to thank the states for signing LOAs.
- 2.5 The website of BOBASMA is available as a link to AAI website ([www.aai.aero/bobasma\\_intro.jsp](http://www.aai.aero/bobasma_intro.jsp)).
- 2.6 Request for State PBN and Data-link approvals data as per Appendix-C of EMA Handbook sent to DGCA India and other member States.
- 2.7 BOBASMA conducted the Airspace Analysis & Safety Assessment for Bay of Bengal Arabian Sea region, which was presented in the 14th meeting of RASMAG held in February 2011 at Bangkok, Thailand. The lateral collision risk was estimated to be  $6.01881 \times 10^{-10}$  & the longitudinal collision risk  $3.71804 \times 10^{-10}$ , both of which are well below the TLS of  $5 \times 10^{-9}$ . The Safety Assessment supports the continued use of 50NM RNP10 lateral separation and also the implementation of RNP10 50NM longitudinal separation on L510, N571, P628 and P762.
- 2.8 The RASMAG/15 in August 2011 meeting has endorsed BOBASMA, India as a competent EMA for the identified sub-region.
- 2.9 APANPIRG in its 22<sup>nd</sup> meeting in September has ratified the endorsement by RASMAG of BOBASMA as a competent safety monitoring agency in September 2011 and listed BOBASMA as approved safety monitoring agency.

### 3. **RESPONSIBILITY OF MEMBER STATES**

- 3.1 Monitoring of aircraft navigation errors is a joint responsibility between the aircraft operators, the States of Registry, and the air navigation services providers of the FIRs concerned.
- 3.2 States must have a Letter of Agreement (LOA) with the designated EMA which clearly spell out the responsibilities and procedures to be followed by respective States and FIR authorities. The LOA should identify suitable designated areas where monitoring is to be done. There is also a need to collect the traffic movement count for each route portion in the area.

- 3.4 When a State of Registry approves or amends the approval of an operator/aircraft for en-route PBN operations, details of that approval must be recorded and sent to the appropriate EMA without delay.

**4. ACTION BY THE MEETING.**

- 4.1 The meeting is invited to
- a) Note the APANPIRG has endorsed BOBASMA as competent EMA for Bay of Bengal, Arabian sea region.
  - b) States are requested to send data of PBN & data-link approvals of aircrafts as per Appendix – C of EMA Handbook.
  - c) Forward the GNE data in a timely manner to BOBASMA.
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