



International Civil Aviation Organization

**The 17<sup>th</sup> Meeting of the Regional Airspace Safety Monitoring Advisory Group  
(RASMAG/17)**

Bangkok, Thailand, 28 – 31 August 2012

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**Agenda Item 5: Airspace Safety Monitoring Activities/Requirements in the Asia/Pacific Region**

**AIRSPACE SAFETY MONITORING WORKSHOP UPDATE**

(Presented by India/AAI)

**SUMMARY**

This paper presents an update on the workshop on Airspace Safety Monitoring jointly conducted by Airports Authority of India and Indian Statistical Institute to train officials of India EMA, BOBASMA on airspace safety monitoring using statistical collision risk modeling.

This paper relates to –

**Strategic Objectives:**

A: *Safety – Enhance global civil aviation safety*

**Global Plan Initiatives**

GPI-8 Collaborative airspace design and management

**1. INTRODUCTION**

1.1 This information paper describes a recent activity undertaken by Airports Authority of India (AAI), jointly with Indian Statistical Institute (ISI) to train the officials of Indian EMA, BOBASMA on the statistical collision modeling techniques used in Airspace safety monitoring. The workshop was conducted from 7<sup>th</sup> May to 11<sup>th</sup> May 2012.

**2. DISCUSSION**

2.1 India having accepted the responsibility to establish an En-route Monitoring agency to support the introduction of 50 NM RHS in the Bay Of Bengal Arabian Sea Indian Ocean airspace, found it necessary to enter into an arrangement with an external organization possessing the required competence as outlined in the EMA Handbook for conducting Safety assessments.

2.2 In January 2011 Airports Authority of India signed a *Memorandum of Association (MoA)* with Indian Statistical Institute for providing assistance and guidance to the officials of AAI/BOBASMA in statistical collision risk modeling as part of its endeavor to establish and En-route Monitoring agency at Chennai, India.

2.3 Statistical experts from ISI worked closely with BOBASMA to conduct Safety assessment for the introduction of 50 NM RHS in Phase1 & 2. These reports were peer reviewed by the mentors SEASMA & AAMA before being presented in the earlier RASMAG meetings.

2.4 Airports Authority of India recognizing the need to develop internal competence in statistical collision risk modeling decided to organize a workshop on *Airspace Safety Monitoring using statistical collision risk modeling* jointly with ISI. A select group of Air traffic controllers from all over India, having mathematical and/or statistical background were as chosen to attend this workshop.

2.5 The five day workshop covered all aspects of analysis of Traffic Sample Data (TSD) and airspace safety monitoring. It included basics of *Probability Theory* and *Theory of Statistical Inference* and details of *Collision Risk Models*.

2.6 The participants were also taught the fundamentals of the computer program *R Programming Language*, used for statistical analysis. During the daily practical sessions participants had hands-on experience in conducting a safety assessment using a true Traffic Sample Data.

2.7 The concluding session was devoted to discussing the data collection errors and the effect it would have on the final outcome of the safety assessments. Participants were also asked to sensitize other controllers in their respective ATC Centers on the need to improve data collection methodology.

### **3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a) note the information contained in this paper

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