



*International Civil Aviation Organization*

**Fourth Meeting of the Southeast Asia Route Review Task Force  
(SEA-RR/TF/4)**

**Bangkok, Thailand, 22 – 26 November 2010**

**Agenda Item 6:      ATS Route Development**

**REDUCED HORIZONTAL SEPARATION ON RNAV ROUTES  
BETWEEN INDONESIA AND SINGAPORE**

(Presented by Indonesia and Singapore)

**SUMMARY**

This paper updates the progress of collaboration to implement reduced horizontal separation based on Performance Based Navigation specifications on two ATS routes between Indonesia and Singapore that serves air traffic between South-East Asia and Australasia with the aim of bringing about an improvement in safety, airspace capacity, flight efficiency and environmental benefits.

Action by SEA-RR/TF/4 is at Paragraph 3.

**1.      INTRODUCTION**

1.1           At the Second Meeting of the Southeast Asia Route Review Task Force held in Bangkok, Thailand on 22 – 26 March 2010, Indonesia and Singapore tabled a paper on the collaboration efforts between the two States to progress with the implementation of reduced horizontal separation on two ATS routes that serves traffic between South-East Asia and Australasia.

1.2           Indonesia and Singapore worked closely to study the areas in which air traffic safety and efficiency could be further enhanced and improved. Air traffic that traverses through Singapore FIR and Jakarta FIR and vice versa not only serves the region but also flights from South-East Asia to Australasia and back. Both States also worked closely with IATA to obtain users' feedback where such improvements in efficiency can best serve their needs.

**2.      DISCUSSION**

2.1           Indonesia and Singapore focused on improving efficiency on two of the major routes that serve South-East Asia and Australasia and back. These two routes are M774 and A576. The current minimum longitudinal separation on these two routes is 10 minutes based on the Mach number technique. Based on the feedback gathered from operators, majority of the flights plying on the 2 routes already have RNAV10 capabilities.

2.2 Taking advantage on the availability of Direct Controller – Pilot Communication (DCPC) facilities throughout these two routes, Indonesia and Singapore worked out a series of proposed changes to the route structure of M774 and A576. The first step is to redesignate ATS route A576 as an RNAV10 route M635. This route will be implemented with the sufficient lateral spacing with the adjacent routes. Similarly, RNAV10 route M774 will be realigned accordingly to achieve a lateral route spacing of 60NM. The proposed route spacing of 60NM between M635 and M774 will allow flexibility for future increase of capacity utilizing higher PBN specifications such as RNP4.

2.3 While the implementation of M635 and realignment M774 would increase the flight distance by 3 NM and 8 NM respectively, the benefit would far outweigh the increase in flight with better flight level allocation on these two routes. See Attachment A for the chart of the proposed routes.

2.4 Indonesia and Singapore worked on the appropriate timeline based on the changes and steps necessary to support this implementation. This includes changes to the ATM systems, conduct of safety assessment by the South East Asia Safety Monitoring Agency (SEASMA) and also the training of the controllers. The following revised timeline was adopted accordingly;

**2<sup>nd</sup> Quarter 2011**

- Implementation of RNAV10 route M635 and realignment of RNAV10 route M774 in Jakarta and Singapore FIR
- Implementation of 50NM lateral separation between M635 and M774.

**3<sup>rd</sup> Quarter 2011**

- Implementation of 50NM longitudinal separation on both M635 and M774.

2.5 While the work on the above is on-going, both States agreed to continue to work closely to look for other areas in which safety and efficiency could be further enhanced.

**3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a) Note the timeline towards reducing horizontal separation on ATS route M774 and M635;
- b) Look at areas where reduced horizontal separation could be implemented through collaboration between States.

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IMPLEMENTATION OF M635 AND REALIGNMENT OF M774

