International Civil Aviation Organization

The Twenty-Second Meeting of the APANPIRG ATM/AIS/SAR Sub-Group (ATM/AIS/SAR/SG/22)

Bangkok, Thailand, 25 – 29 June 2012

Agenda Item 5: Provision of ATM/AIS/SAR in the Asia/Pacific Region, including associated CNS matters
Agenda Item 6: Air Navigation Service Deficiencies

AIR TRAFFIC MANAGEMENT ENHANCEMENTS BETWEEN JAKARTA AND SINGAPORE FIRs

(Presented by Indonesia and Singapore)

SUMMARY

This paper presents an update on the collaborative efforts by Indonesia and Singapore to enhance Air Traffic Management (ATM) between Jakarta and Singapore FIRs.

The various initiatives aim at enhancing safety and efficiency through a measured increase in capacity to meet the future growth of air traffic in this region. At the same time, these efforts eliminate air navigation deficiencies in the ATM/AIS/SAR field in the Asia/Pacific 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-5 RNAV and RNP (Performance-based navigation)

1. INTRODUCTION

1.1 Air traffic movement in this region has grown at a steady rate for the past decade. Boeing has estimated that air traffic in the Asia Pacific region will continue to grow by 6.7% for the next 20 years. Flights between Jakarta and Singapore FIRs have seen similar steady growth despite the downturn of the region's economy in 2008. Between Jakarta (Soekarno Hatta – WIII) and Singapore (Changi – WSSS) itself is one of the top 10 busiest city pair routes in the world[1], which sees about 273 flights in a week. Similarly, key ATS routes that traverse between Jakarta and Singapore FIRs serves flights between South East Asia and Australasia.

[1] CAPA Centre for Aviation (2011, September 2). The world's top ten routes are in Asia Pacific. Retrieved on 20 April 2012 from http://www.centreforaviation.com/analysis/the-worlds-top-ten-routes-are-in-asia-58178

1.2 Indonesia and Singapore recognise the need for States to work closely in order to enhance safety and efficiency for air traffic. The two States have presented at various regional ATM forums on such initiatives. This includes reduction of horizontal separation and addressing air navigation deficiencies.

1.3 To prepare the region for the future growth of air traffic, ICAO has formed the Asia Pacific Seamless Airspace Planning Group. Indonesia and Singapore support the call by ICAO to establish a seamless environment for air traffic to operate in. This includes surveillance (ADS-B) data sharing and the cross boundary application of surveillance separation where possible.

2. DISCUSSION

Implementation of RNAV10 50/50 Separation

2.1 On 9 February 2012, Indonesia and Singapore implemented of RNAV10 50/50 separation on RNAV10 routes M635 and M774. These routes replaced the previous ATS routes A576 and M774/A464 that connects Australasia – South East Asia and beyond.

2.2 The implementation of RNAV10 50/50 separation on RNAV10 routes M635 and M774 increased the capacity on each route with the reduction of longitudinal separation from the conventional 10 minutes based on Mach Number Technique to 50 NM distance based separation.

2.3 The establishment of RNAV10 route M635 and the realignment of M774 also meant that the two routes operates independently in terms of flight level assignment. This not only further enhances capacity and safety, but also increases the opportunity for flights to attain their optimal flight levels when operating on these 2 routes. This combined enhancement is estimated to contribute savings of up to 1,500,000 kg fuel for flights operating on these routes annually.

Air Navigation Deficiency

2.4 With the realignment of routes in the areas mentioned above, Indonesia and Singapore also took the opportunity to address the air navigation deficiency in the ATM/AIS/SAR fields in the Asia/Pacific region by implementing RNAV route L504 to replace the cross boundary domestic route W36. Apart from addressing the deficiency, it also contributes to flight efficiency by reducing flight distance by up to 20NM. This contributes to approximately 2.3 %[1] fuel reduction for flights that operate on L504 annually.

2.5 The implementation of RNAV route L504 on 9 February 2012 helps operators to further enhance the flight planning ability of international flights between key cities in South East Asia – Borneo and Sulawesi.

Surveillance Separation on B470 and G579

2.6 The ATS routes B470 and G579 serve one of the busiest international routes[2] in the world for flights between WIII and WSSS FIRs. Recognising the high volume of traffic on these routes and the availability of overlapping surveillance coverage at the Jakarta and Singapore FIR boundary, both States have collaborated to enhance safety and capacity in this area.

2.7 The current conventional longitudinal separation of 10 minutes would be reduced to 40 NM. With a targeted date of implementation of these procedures in August 2012, there's potential to further reduce the longitudinal separation in the future to meet growing air traffic demands.

[1] Based on ICAO IFSET Model

[2] Second only to number of seats between Hong Kong and Taipei.

2.8 To further streamline the flow of traffic on these two routes, Indonesia and Singapore would also explore the possibility of implementing RNAV5 routes by enabling closer spaced routes to segregate traffic between WIII and WSSS and the overflights on both directions.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the collaboration between Indonesia and Singapore to enhance air traffic management between Jakarta and Singapore FIRs;

b) note the joint effort to further enhance flight safety by addressing the Air Navigation Deficiencies in the ATM/AIS/SAR fields in the Asia/Pacific Region with the implementation of L504 to replace the cross boundary domestic route W36; and

c) discuss on other areas where similar enhancement would benefit, especially on high volume routes to meet the growing demands of air traffic in this region

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