International Civil Aviation Organization

The Fourth Meeting of ICAO Asia/Pacific Air Traffic Flow Management Steering Group (ATFM/SG/4)

Bangkok, Thailand, 1 – 5 December 2014

Agenda Item 5: Development of Regional ATFM Framework

THE IDEAS OF AFP OPERATIONS IN SOUTH CHINA SEA AREA

(Presented by CHINA)

SUMMARY

This paper presents a brief on the ideas of Airspace Flow Program in South China Sea Area. With the traffic congestion appears to spread from the terminal area to the cruising stage, ATFM development in Asia-Pacific Region is appealed to pay attention to the airspace flow management.

1. INTRODUCTION

1.1 In recent years, with the rapid growth of flight flow in the Asia-Pacific Region, flight congestion appears to spread from the terminal area to the cruising stage and it is more obviously to the South China Sea Area. The trend of the traffic flow from Southeast Asia to Northeast Asia as one of the three busiest air traffic flows in Asia-Pacific Region shows an explosive growth on the major route of the South China Sea Area, like the route A202、A1、L642、M771 etc. Especially, the route A1 shows a high growth rate of 26% every year in the past 5 years.

1.2 In the development stage of ATFM in the Asia-Pacific Region, we should try to avoid the problem that after solving the terminal flight congestion, we have to face the new flight congestion at cruising stage, this is just like what had already happened to the North America and other countries or regions. We can draw lessons from the historical experience of relevant countries to plan the ATFM in the Asia-Pacific Region with a higher and more long-term perspective. We should carry out the work both from the terminal airspace and the area control airspace to complete the concept of distributed and multi-nodal ATFM network in the Asia-Pacific Region.

1.3 The ATFM Operational Trial in the Asia-Pacific Region has made many achievements in a friendly and close environment, and continue efforts to promote the development of airspace flow management. China Sanya as a participant of the group, is committed to working with other members to improve and develop the airspace flow management. We are trying to construct the Airspace Flow Program(AFP) in the South China Sea Area to make the air traffic flow from southeast Asia to northeast Asia more smoothly, and to improve the concept of distributed multi-nodal ATFM network.

2. DISCUSSION

Overview

2.1 When the related routes in the South China Sea Area (A202, A1, L642, M771 etc.) are limited or will be limited, AFP will be started to maximize the use of airspace capacity and to improve the level of security, reduce flight delays.

2.2 For airlines, AFP can reduce the airspace holding and frequent speed adjustment, shorten the range, and improve operation efficiency.

Objectives

2.3 It can promote the realization of the following goals by the research and implementation of AFP in South China Sea Area.

i. Response to the bad weather that lead to a decrease of airspace capacity in the South China Sea Area.

ii. Use AFP to reduce or gradually replace other unreasonable measures such as the delivery of MIT.

iii. Increase the situational awareness of demand-capacity balancing of airspace users.

iv. Strengthen the collaborative decision-making between the ATFM units and the airspace users.

v. Promote the collaborative reroute from the congestion routes to smooth routes, increase the whole airspace capacity utilization.

vi. Complete and perfect the system and concept of ATFM in the Asia-Pacific Region.

Mechanisms

2.4 The first step, when the air traffic flows have exceeded or are expected to exceed the capacity, the ATFM units will calculate the Evaluated Delay Distribution (EDD, usually shown as CTOT) and deliver the information to the relevant airspace users.

2.5 The second step, the relevant airspace users shall response to the Evaluated Delay Distribution (EDD), this process can be called Delay Distribution Response (DDR). The options for DDR phase include:

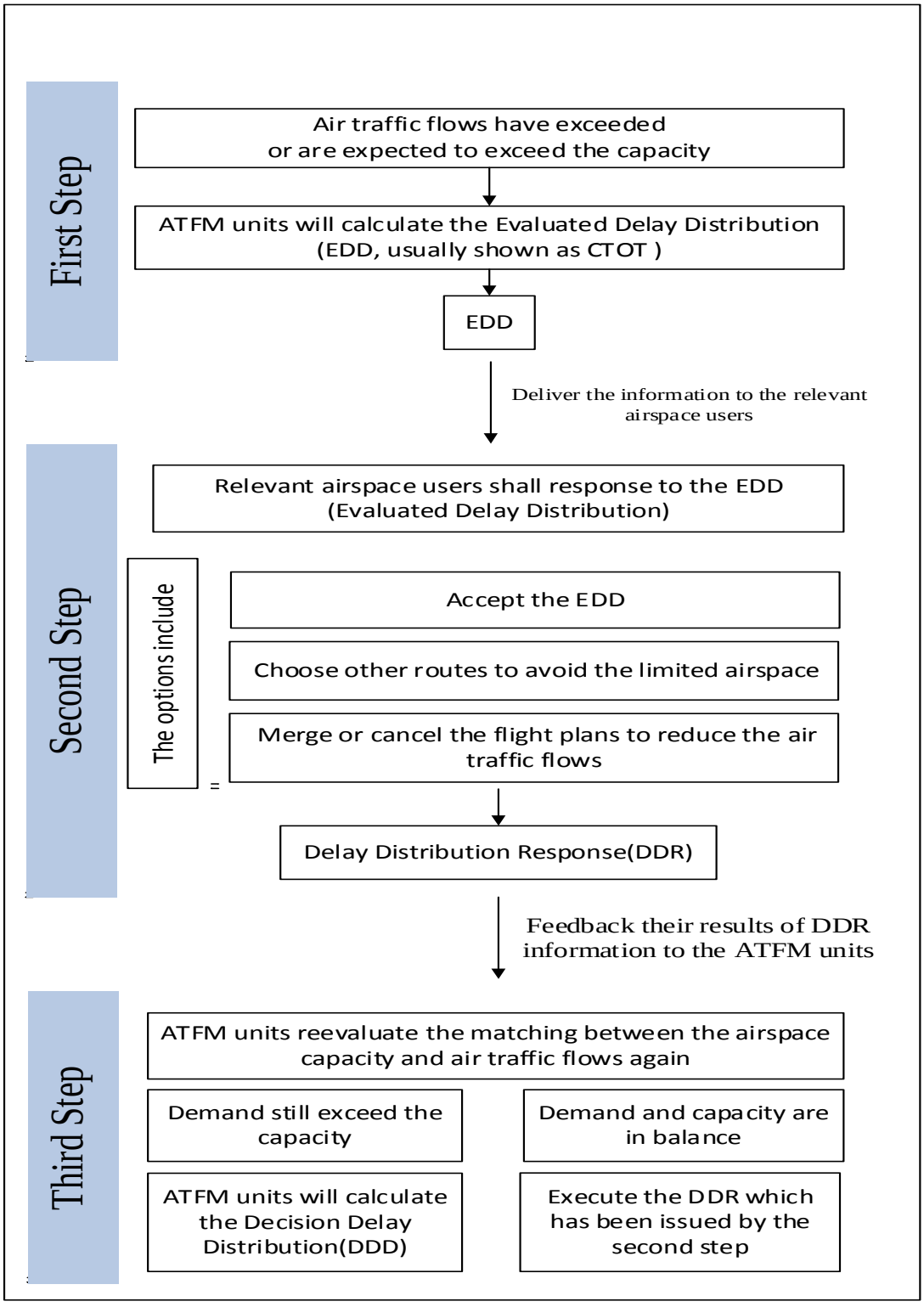
i. Accept the EDR

ii. Choose other routes o avoid the limited airspace

iii. Merge or cancel the flight plans to reduce the air traffic flows

And then, airspace users should feedback their results of DDR information to the ATFM units.

2.6 The third step, ATFM units reevaluate the matching between the airspace capacity and air traffic flows again after received the DDR. If the demand still exceed the capacity, ATFM units will calculate the Decision Delay Distribution (DDD) delivering to the relevant airspace users. If the demand and capacity are in balance, the relevant airspace users should execute the DDR which has been issued by the second step.



Planning

2.7 AFP will face a similar situation as GDP confronts in the operation process that how to perform as the CTOT required for a large amount of international flight. In the operation of present ATFM, the ANSPs barely do the delay action to for the international flights. Since all of the flights overflying Sanya FIR are 100% international flights, AFP in South China Sea Area need to be more supportive and carry out in a consistent and harmonized manner.

2.8 All the participants of the Asia-Pacific Region are appealed to continuously accumulate operating experiences, improve the ability of the prediction and evaluation of the air traffic flow, and gradually improve the ability of information and data communication between the ATFM nodes, to detail the research of AFP operation mechanism, to establish a set of robust operation rules, and to develop the corresponding decision aids system.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper;

b) recognize the importance of the construction of AFP in South China Sea Area;

c) discuss any relevant matters as appropriate.

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