



TWELFTH AIR NAVIGATION CONFERENCE

Montréal, 19 to 30 November 2012

Agenda Item 4: Optimum capacity and efficiency – through global collaborative ATM

4.1: Efficient management of airspace and improved flow performance through collaborative decision-making (CDM)

SEAMLESS GLOBAL IMPLEMENTATION OF AIR TRAFFIC FLOW MANAGEMENT (ATFM) THROUGH THE ICAO MANUAL ON COLLABORATIVE ATFM

(Presented by Thailand)

SUMMARY

With the continued strong growth of air traffic in the Asia/Pacific Region, there is a need to effectively manage demand and capacity especially at major international air hubs like Bangkok Suvarnabhumi International Airport. Such a need presented Thailand with a unique opportunity to collaborate with aviation partners in various forums to provide air traffic flow management (ATFM) service and participate in development of the *ICAO Manual on Collaborative Air Traffic Flow Management* (Doc 9971) with a view to supporting sustainable growth of air traffic in this region.

This paper presents Thailand's support of Doc 9971 as well as suggests furthering enhancing the manual and communications rollout plan.

Action: The Conference is invited to agree to the recommendation in paragraph 3.

1. INTRODUCTION

1.1 The Asia/Pacific Region has seen strong air traffic growth for the past decade and the robust growth is expected to continue globally at 6 per cent per annum till 2014¹ with the Asia/Pacific Region expected to experience approximately 6% traffic growth (Boeing and Airbus forecasts) and Thailand experiencing 11% traffic growth between fiscal years 2011 – 2012. Major international air hubs in the region contributed significantly to the continued global air traffic growth. Amidst the strong growth, there is an urgent need for airport operators and air navigation service providers (ANSPs) to balance demand and capacity of airports and air traffic management (ATM) systems. Air traffic flow management (ATFM) is one of the tools to ensure a sustainable air traffic growth for the future.

¹Expected growth of 6.0% for 2013 and 6.4% for 2014. Source: ICAO (2012, 5 July) ICAO News Release: Robust Traffic Growth Expected Until 2014.

1.2 ICAO has long recognized the growing importance of ATFM to the global aviation industry. Efforts to progress ATFM across various fronts have been developing well in recent years. Individual States through ANSPs have implemented ATFM successfully to manage their domestic air traffic. At a regional level, such as Europe, ATFM has effectively enabled sustained air traffic growth. At the global level, ICAO is developing the *ICAO Manual on Collaborative Air Traffic Flow Management* (Doc 9971); the draft version is presented to the Conference through AN-Conf/12-IP/10, supporting AN-Conf/12-WP/10 by the ICAO Secretariat, to harmonize development and progressive implementation of ATFM with CDM. Concurrently, the ICAO aviation system block upgrade (ASBU) concept emphasises the significance of collaborative decision-making (CDM) to allow a sustainable growth of air traffic for the future with CDM guidance material also integrated as part of Doc 9971.

1.3 There have been various ATFM initiatives in the Asia/Pacific Region in the past few years; however, apart from ATFM implementation at individual States to manage domestic air traffic, there is a need of other developments to manage regional air traffic. One example would be the implementation of the long-haul ATFM procedures over the Bay of Bengal area. Through the collaborative efforts of the States and stakeholders in the ICAO ATFM Task Force, Aeronautical Radio of Thailand Limited (AEROTHAI) developed the Bay of Bengal Cooperative Air Traffic Flow Management (BOBCAT) system, established and managed by the Bangkok ATFM unit to ensure the westbound air traffic flow from South East Asia to Europe in a safe and orderly manner through busy airspace in South Asia.

1.4 AEROTHAI and the Civil Aviation Authority of Singapore (CAAS) have also been collaborating to conduct collaborative decision-making (CDM) trials between Bangkok's Suvarnabhumi Airport and Singapore Changi Airport. Under the auspices of the Civil Air Navigation Services Organization (CANSO), the pilot project aims for flights between these city-pair to demonstrate the efficiency gains achievable through the integration of airport and en-route CDM. Trials conducted in July and August 2012 have been encouraging in delivering benefits to the stakeholders in terms of predictability to allow better planning.

1.5 Thailand, along with other States/ANSPs with ATFM experience has also been supporting the ICAO initiative to develop global ATFM guidance material, through the provision of expert ATFM input, with the goal to deliver the document to this AN-Conf/12. The document is part of Doc 9971, along with CDM guidance material, also developed by ICAO. Part II of the manual in draft form is presented to the Conference through AN-Conf/12-IP/10, supporting AN-Conf/12-WP/10 by the ICAO Secretariat.

1.6 Hong Kong, China and Thailand also supports the ICAO Southeast Asia ATM Coordination Group (SEACG) in co-leading ATFM Small Working Group (SWG), while Thailand has the honour to lead the ATFM SWG of the ICAO South Asia/Indian Ocean ATM Coordination Group (SAIOACG) to coordinate on-going development of ATFM in major subregions, in coordination with Singapore leadership of ATS Surveillance SWG of both SEACG and SAIOACG.

1.7 Moreover, Thailand continues to cooperate with other States in support of ICAO Asia/Pacific Seamless ATM initiatives through the ICAO Asia/Pacific Seamless ATM Planning Group forum in various forms such as collation of combined communications and surveillance.

2. MANUAL ON COLLABORATIVE AIR TRAFFIC FLOW MANAGEMENT (DOC 9971)

2.1 While Thailand was involved in the process of developing the ATFM part of Doc 9971, involvement on development of the CDM part of the manual was limited.

2.2 Nevertheless, as suggested by another separate WP submitted to the Conference by Hong Kong, China, Singapore and Thailand, the overall manual should take into account potential concerns of States tasked to manage largely international traffic, growing very quickly relative to the rest of the world. In such cases, it would be necessary for planning and implementation of ATFM and CDM to be closely coordinated. Moreover, Airport-CDM implementation at major airports linking international hub traffic, especially ones where traffic demand is approach capacity, would be necessary.

2.3 While Thailand supports the ICAO initiative to develop Doc 9971, it must be recognized that the manual should take into account concerns in 2.2 above.

2.4 Similar to new ICAO initiatives such as introduction of the ICAO fuel savings estimation tool (IFSET), communications and the roll-out plan needs to be developed and deployed so as to reach key stakeholders concerned with the CDM and ATFM process.

2.5 The Conference should also note existence of the Global ATFM Conference, last of which was hosted by AEROTHAI in Phuket, Thailand in February – March 2011. Indonesia plans to host the next Global ATFM Conference on 28 to 30 January 2013 in Bali, Indonesia. As the conference evolved from ATFM best practice exchange among major ATFM service providers such as FAA Air Traffic Control System Command Centre (ATCSCC) and EUROCONTROL Central Flow Management Unit (CFMU, now evolved to Directorate Network Management) gathering more participants interested in ATFM over time, the seventh Global ATFM Conference could be a good forum for initial roll-out of Doc 9971. Seminar and workshop activities could be developed to disseminate the overall intent of the manual, supported by major ATFM service providers and stakeholder organizations such as EUROCONTROL and IATA.

2.6 Following the initial roll-out of the manual, it is envisioned that ICAO could leverage regional offices' facilities in further explaining the content of the manual. In some cases such as Asia/Pacific Region, there are specific ATFM small working group of ATM coordination groups tasked to examine key major traffic flows such as the ICAO Southeast Asia ATM Coordination Group (SEACG) and the ICAO South Asia/Indian Ocean ATM Coordination Group (SAIOACG), which could find content of the manual useful.

2.7 Moreover, as CDM and ATFM service continue to be developed, a robust process must be put in place to update the manual in order to maintain relevance both in perspective of States with no CDM/ATFM experience and those with more experience.

2.8 As ICAO has already leverage expertise from experienced States of Organizations in development of the manual, the same group of expertise could also be leveraged in development of the roll-out and communications plan along with maintenance and updates to the document.

3. CONCLUSION

3.1 As benefits of implementing CDM/ATFM in enhanced safety, reduction of aircraft fuel consumption, reduction in greenhouse gas emissions, optimization of airline operating costs and capacity optimization of ATM resources are recognized, robust collaborative implementation of a CDM/ATFM concept through the use of Doc 9971 along with an associated process to maintain the manual would become necessary to ensure sustainable growth of aviation industry and world economy.

3.2 The Conference is invited to agree to the following recommendation:

Recommendation 4/x – Recognize the need for a harmonized and collaborative implementation of collaborative decision-making and air traffic flow management in order to achieve the vision of seamless air traffic management in line with the aviation system block upgrade modules through the *Manual on Collaborative Air Traffic Flow Management* (Doc 9971)

That ICAO:

- a) incorporate into the ICAO *Manual on Collaborative Air Traffic Flow Management* (Doc 9971) collaborative decision-making (CDM) and air traffic flow management (ATFM) implementation guidance to States tasked to manage largely international traffic where close coordination of planning and implementation of CDM and ATFM would be needed along with Airport-CDM implementation for airports where traffic demand approaches capacity;
- b) collaboratively develop and execute global communications and roll-out plan for the ICAO *Manual on Collaborative Air Traffic Flow Management* (Doc 9971) with consideration of potentially leveraging expertise contributed in development of the manual;
- c) develop robust maintenance process for the ICAO *Manual on Collaborative Air Traffic Flow Management* (Doc 9971) to ensure relevance of the manual as collaborative decision-making and air traffic flow management services continue to be developed; and

That the Conference:

- a) supports global harmonization of collaborative decision-making and air traffic flow management utilizing the ICAO *Manual on Collaborative Air Traffic Flow Management* (Doc 9971).

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