55th CONFERENCE OF DIRECTORS GENERAL OF CIVIL AVIATION ASIA AND PACIFIC REGIONS

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AGENDA ITEM 8: TECHNICAL AND REGIONAL COOPERATION

HARMONIZATION OF AIR TRAFFIC FLOW MANAGEMENT IN APAC REGION AND SHARING OF RELATED A-CDM DATA

Presented by Hong Kong, China

SUMMARY

This Paper presents the need for continued efforts by States/Administrations to harmonize the various developments of cross-border Air Traffic Flow Management (ATFM) across the APAC Region, not only in terms of system interoperability but also in the recognition of the legitimacy and compliance with network distributed measures, competencies of ATFM-related personnel and standardized inter/intra network phraseologies.
It also outlines the potential benefits and encourages the sharing of A-CDM data for the purpose of improving demand prediction and maximizing the use of airspace and airport resources.

HARMONIZATION OF ATFM IN APAC REGIONS AND SHARING OF A-CDM DATA

1. INTRODUCTION

1.1 With 14 of the Globe's top 20 busiest international routes now within the Asia/Pacific region, 6 of them to or from Hong Kong International Airport (HKIA)[1] and accumulated Hong Kong FIR overflight traffic growth of more than 52% during the past 3 years, Hong Kong China has placed the accelerated development of ATFM as one of its top Strategic ATM priorities for the next 5 years.

1.2 Hong Kong China has strongly supported the development of the Asia/Pacific Framework for Collaborative ATFM and is evolving its workflows, processes and ATFM system development to ensure harmonization with the developing Asia/Pacific Regional ATFM Network.

1.3 Harmonization and interoperability across *all* FIRs/ANSPs should be the key Regional goal to efficient, effective and equitable cross-border ATFM in the future.

1.4 Additionally, experience gained so far through the phased implementation of A-CDM at HKIA points to the potential benefits of sharing certain elements of A-CDM data between Regional Air Traffic Flow Management Units (ATFMUs) emanating from airports within their ATFM jurisdiction.

2. DISCUSSION

Harmonization of ATFM

2.1 Harmonization refers not only to the interoperability of ATFM systems to exchange agreed data formats but also to other areas such as the legitimacy of networked ATFM measures, CTOT/CTO compliance tolerance, ATFM personnel competencies and ATFM-related phraseologies.

2.2 While the Regional ATFM Concept of Operations, using Ground Delay Programs (GDPs), has successfully undergone trial by Hong Kong China in recent real-life constrained airport conditions at HKIA, the challenge ahead is to adapt the same processes to constrained airspace or routes using Airspace Flow Programs (AFPs). Hong Kong China is collaborating closely with other APAC States/Administrations and stakeholders to ensure the maximum level of predictability and efficiency is achieved.

2.3 Hong Kong China recognizes the need for individual States, particularly those with significant domestic traffic numbers or specific localized traffic flow issues between several ANSPs, to adopt unique means of internal information sharing but requests all States to work towards achieving interoperability of such systems with the wider Regional ATFM Network at the earliest possible time.

2.4 Although the Regional ATFM Concept has undergone trial by States/Administrations in a collaborative but largely informal manner, as momentum is gained in the application of ATFM across the network, so the legitimacy and imperative nature of GDPs to FIRs far upstream is already the subject of discussion. It is clear that formalization of ATFM Network measures and the agreement of States to facilitate compliance with such, may require the development of a common Memorandum of Understanding or similar.

2.5 In respect of CTOT and/or CTO compliance, it is important there is a clear understanding and distinction between the broad volume-based goals of ATFM and more specific

1 Source: OAG Report February 2018

tactical spacing/separation requirements between individual pairs of aircraft. ATFM measures are not intended to obviate the need for tactical ATC intervention where the responsibility for maintenance of separation should lay. This is expected to become more critical as AFPs using CTOs come into greater use. There are currently signs that there may be disengagement between ATFM Unit (ATFMU) applications and the day to day operational ATC application across FIR boundaries in corresponding ACCs.

2.6 Increasing distribution of ATFM measures throughout the current small network is already placing increased demand on the provision of human resources to coordinate on a 24-hour basis. Provision of such personnel and harmonization on the required competencies and level of ATC background considered desirable, from at least ATFMU leaders, will become a high priority and requires further discussion and agreement.

2.7 Finally, it is already recognized, through early trial application, that there is a need for a broader range of standard ATFM phraseologies than currently is contained in ICAO Doc 9971, not only from an ATFMU to ATFMU perspective but between ATFMUs and other Stakeholders, particularly when CTOT/CTO becomes the primary ATFM tool across the network.

Sharing of A-CDM Data

2.8 With the increasing implementation of A-CDM at major airports throughout the Region, a significant amount of data is being generated which can be used outside of the immediate airport environment to enhance regional ATFM-related predictability.

2.9 Currently, demand prediction at a destination airport or downstream airspace/route constraint point relies on the use of the Filed Flight Plan (FPL) Estimated Off Blocks Time (EOBT) and standard taxi times combined with Estimated Elapsed Times (EETs). EOBT is the estimated time at which an aircraft will commence movement associated with departure and aircraft operators are required to update EOBT only when it is envisaged to experience a delay of 15 minutes or more. Recent surveys have showed DLA message issuance to be very low in general; hence EOBTs are often unreliable in providing an accurate demand prediction.

2.10 Furthermore, EOBT does not give a good indication of the estimated take off time as there is no consideration of actual taxi time as well as other operational factors (e.g. airway release time) that may affect the departing flights.

2.11 With the implementation of A-CDM in many airports across the region, flight operators are required to provide a Target Off-block Time (TOBT), in most cases at least 40 minutes beforehand and with an accuracy of +/– 5 minutes. Based on TOBT provided, the A-CDM system is able to work out the corresponding Target Take Off Time (TTOT) for the flight taking into account aircraft parking stand, taxi time, number of departures ahead, runway in use and other operational factors. TTOT is therefore a much better indication of the estimated departure time.

2.12 With the development of the Regional cross-border ATFM Network, there is the possibility of sharing TTOT from a departure A-CDM airport with intermediate and destination ATFMU's, so as to provide a more refined level of demand prediction and make any necessary adjustments to ATFM measures prior to the flight becoming airborne.

2.13 Hong Kong China would like to encourage the output of at least TOBT and TTOT data from A-CDM systems into the developing ATFM data exchange format for ultimate distribution via System Wide Information Management (SWIM) while exploring whether there are potential benefits from sharing other A-CDM data which can enable better predictability and the timely deployment of resources to match demand or when necessary, to facilitate more accurate ATFM measures, particularly Ground Delay Programs (GDPs).

3. ACTION BY THE CONFERENCE

3.1 The Conference is invited to:

a) note the information contained in this Paper;

b) discuss and propose further means to facilitate harmonization and interoperability of ATFM systems and processes, training standards and communication across all ANSPs in the APAC ATFM network;

c) discuss the desirability of A-CDM data sharing to enhance ATFM efficiency and effectiveness.

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