INTERNATIONAL CIVIL AVIATION ORGANIZATION

TWENTY NINTH MEETING OF THE ASIA/PACIFIC AIR NAVIGATION PLANNING AND IMPLEMENTATION REGIONAL GROUP (APANPIRG/29)

Bangkok, Thailand, 3 to 5 September 2018

Agenda Item 3: **Performance Framework for Regional Air Navigation Planning and Implementation**

3.2: **ATM**

ENHANCING AIRSPACE CAPACITY THROUGH THE PHASED IMPLEMENTATION OF AIDC OPERATION AND REDUCED LONGITUDINAL SPACING IN HONG KONG FIR

(Presented by Hong Kong, China)

SUMMARY

The paper outlines the Strategic ATM plan of Hong Kong Civil Aviation Department with a planning horizon up to and beyond 2025. One of the main initiatives is to enhance airspace capacity through phased implementation of reduced longitudinal spacing and AIDC operation in Hong Kong FIR which can effectively maximise airspace utilisation to accommodate more traffic at the optimum flight levels and minimise the adverse effects on the environment by civil aviation activities.

Strategic Objectives:

A: ***Safety*** *– Enhance global civil aviation safety*

B: ***Air Navigation Capacity and Efficiency****—Increase the capacity and improve the efficiency of the global aviation system*

*E****: Environmental Protection*** *— Minimise the adverse environment effects of civil aviation activities*

1. INTRODUCTION

1.1 The robust growth of air traffic in the Asia Pacific region in recent years is forecast to continue well into the next decade. It will inevitably result in an increase in service demand which calls for a more effective and efficient management of its airspace capacity.

1.2 Following the guidance of the Global ATM Operational Concept (Doc 9854), the Global Air Navigation Plan (GANP) and the Asia/Pacific Seamless ATM Plan, Hong Kong Civil Aviation Department (CAD) has formulated a Strategic ATM Plan with a scope extends up to and beyond 2025. The plan comprises several initiatives to optimise airspace capacity.

1.3 The Strategic ATM Plan focuses on 3 main areas of performance improvement which are related to Safety, Regularity and Efficiency:

i Simplification of operating procedures,
ii Restructure of airspace,
iii Enhanced ATFM processes.

1.4 As regards the simplification of operating procedures which are built on the capabilities of the existing Air Traffic Management System (ATMS), Hong Kong CAD is pursuing the implementation of full ATS Interfacility Data Communication (AIDC) operation with the neighboring ANSPs as soon as practicable. In addition, the phased implementation of reduction of longitudinal spacing with the ultimate objective of providing uniform surveillance-based spacing across all FIR boundary fixes is aimed to effectively manage controllers' workload and increase overall operating efficiency and capacity in Hong Kong FIR.

2. DISCUSSION

Implementation of AIDC with adjacent ANSPs

2.1 AIDC is an effective means to streamline the coordination between ATS units. The automated data exchange between ATC systems ensures timely dissemination of flight data. It is proven to be reliable in maintaining data integrity and effective in reducing the workload as well as errors induced by the traditional voice coordination between ATS units.

2.2 AIDC has been implemented between Sanya ACC and Hong Kong ATCC for quite some time. With the experience gained from operation under various situations such as large scale weather deviation and loss of ADS-B coverage, negotiations are in progress with Sanya ACC for TOC/AOC messaging to be applied as soon as practicable so as to reap more benefits from its implementation.

2.3 In addition, Hong Kong CAD has been maintaining close liaison with the regional Air Traffic Management Bureau of Civil Aviation Administration of China (CAAC ATMB) on the progressive implementation of AIDC with Guangzhou ATCC. AIDC operation at selected transfer of control points was implemented in May 2018. It is anticipated that implementation of AIDC operation would be expanded to other major transfer of control points in the Pearl River Delta (PRD) region from 2019 onwards.

2.4 AIDC Interoperability Test between Hong Kong and Manila was successfully conducted in May 2018. It is planned to be implemented on the three FIR boundary fixes between Manila and Hong Kong. The actual implementation date will be subject to the replacement schedule of Manila's new ATMS.

2.5 With more experience gained from AIDC operations with other ANSPs, it is considered opportune to explore the feasibility of surveillance hand-off between Hong Kong and other ACCs by means of the AIDC TOC/AOC function. Such application is expected to further reduce the workload of ATC operational staff.

Enhancing Airspace Capacity

2.6 To be in line with ICAO Regional Seamless ATM initiative and achieve the goals/action plan agreed in the South China Sea Traffic Flow Review Group and SEACG/25 meetings, Hong Kong China has initiated discussions with neighbouring ANSPs concerning the way forward for the phased implementation of reduced longitudinal spacing.

2.7 During an informal group meeting, i.e. the 11th Meeting of East Asia Air Traffic Management Coordination Group (EATMCG/11), which was held in Cebu, Philippines between 10 and 12 July 2018, Hong Kong China presented a working paper stating that there was a genuine need to expedite the implementation of PBN specification on air routes A461 and A583 to facilitate the reduction of longitudinal spacing. The idea was welcomed by the Philippines and both parties agreed that the initiative should be accomplished as soon as possible subject to the Philippines' successful transition to their new ATMS which was expected to materialise in 2018.

2.8 In addition, subject to the outcome of a safety assessment to be conducted by Hong Kong China and the agreement with adjacent ACCs, 20NM reduced longitudinal spacing would be applied in phases at the common FIR boundary points. Such reduction of spacing is in line with the progressive spacing reduction plan being considered for the eastern, western and south-western portion of Hong Kong FIR.

2.9 Hong Kong has already adopted separation minimum based on full surveillance coverage within the whole of en-route and terminal airspace in accordance with the Seamless ATM Plan. The ultimate objective is to increase route and airspace capacity which is considered to be one of the key enablers to allow more efficient flow of traffic, with minimum tactical intervention by ATC or ATFM measures.

3. ACTION BY THE MEETING

3.1 The meeting is invited to note the information contained in this paper.

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