



International Civil Aviation Organization

**The Third Meeting of the APANPIRG ATM Sub-Group
(ATM /SG/3)**

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Agenda Item 5: ATM Coordination (Meetings, Route Development, Contingency Planning)

**ARRANGEMENT AFFECTING ADJACENT FIRs
DURING CUTOVER OF HONG KONG ATC OPERATIONS**

(Presented by Hong Kong, China)

SUMMARY

This paper focuses on the possible impacts of implementation of the new Air Traffic Management System in Hong Kong on adjacent FIRs. The arrangements of switching over of the communication networks and the possible measures to regulate air traffic entering Hong Kong FIR are presented. The understanding and support from all working counterparts are essential for the success of Hong Kong ATC operation cutover.

1. INTRODUCTION

- 1.1 In an effort to manage the increasing regional demand for air navigation service, Hong Kong CAD has launched several initiatives in upgrading the civil aviation infrastructure. One important project is the replacement of air traffic control systems. The scope of the project consists of renewal of all ATC and supporting equipment and relocation of operation facilities namely Aeronautical Information Management Centre (AIMC), Aeronautical Communications Centre (ANC), Air Traffic Control Centre (ATCC), Aerodrome Control Tower (Tower) and Rescue Coordination Centre.
- 1.2 The target implementation date of the core system - Air Traffic Management System (ATMS) in the new ATCC and Tower is mid-2016, whereas new AIMC and ANC are scheduled to commence operation in late 2015.
- 1.3 A detailed cutover plan has been worked out to ensure a safe and orderly flow of air traffic will be maintained during the implementation of the replacement ATC systems and the transition of ATC operations to the new facilities.

2. ARRANGEMENT TO SUPPORT CUTOVER OF HONG KONG ATC OPERATION

2.1 ATC Communication Networks – The major communication networks supporting inter Area Control Centre (ACC) coordination include Inter Area Speech Circuit (IASC), ATS Inter-Facility Data-Link Communication (AIDC) and telephone lines. The switchover of these networks may interrupt the data / information flow. ATC operation needs to be safeguarded.

2.1.1 IASC is the most frequently used direct communication network between ACCs. The switching of the IASC network will be conducted internally and should be transparent to counterparts during the cutover of Hong Kong ATC operations.

2.1.2 AIDC between Hong Kong and Sanya ACC has been in operation. The technical arrangement for testing and switching over of the AIDC network will be discussed upon completion of the System Integration Test (tentatively scheduled in August 2015) of the ATMS. During ATC operations cutover, AIDC networks will be patched to the new ATC facilities. To minimize the risk of data loss in the switchover process, AIDC operation may be suspended for a defined period before and after cutover. Without AIDC, all flight transfer messages will be coordinated verbally via IASC.

2.1.3 Telephone lines serve as an effective means of coordination between ACCs. Similar to IASC, the switching of telephone lines will be performed internally and should be transparent to outsiders. The telephone numbers of HK ATCC and Tower will remain unchanged.

2.2 Regulating Traffic Flow Entering Hong Kong FIR During Cutover Period

2.2.1 It is generally understood that operational colleagues, though provided with conversion training, have only limited experience on the new equipment/systems. Despite ATC operations cutover is a carefully planned event, there is a genuine need to cater for any unexpected issue in the cutover process particularly in the initial stage of the new operation. To guard against unexpected surge of traffic, appropriate air traffic flow measures will be imposed. ATC operations after cutover will be closely monitored and the traffic regulating measures will be constantly reviewed. It is envisaged that such safeguarding measures can be removed approximately one month after cutover.

2.2.2 Traffic operating at Hong Kong International Airport (HKIA) – The hourly Runway Acceptance Rate will be suitably adjusted during the initial cutover period. However, the total daily flight movements would not be reduced. HKIA flight movements would be regulated via ATFM measures on HKIA arrivals and departures. In order to minimize the impact of flow control on upstream ACCs, all flow controls will be route specific. In general, the flow interval at the FIR transfer point is determined by traffic volume of the route. The higher the traffic volume, the smaller will be the flow interval. The detailed flow measures will be released to ACCs concerned as soon as possible to ensure sufficient response time available.

2.2.3 Traffic transiting Hong Kong to and from Macao International Airport – These flights will be regulated by flow measure as mentioned in paragraph 2.2.2.

- 2.2.4 Traffic transiting Hong Kong FIR – Flow measures for these overflights will be implemented to maintain the amount of traffic entering Hong Kong FIR at a manageable level. Adjacent ACCs will be requested to hand-off traffic at 15 to 20 NM in trail. Controllers would have sufficient time to handle flights entering their ATC sectors from multiple transfer (traffic handoff) points.

3. CONCLUSION

- 3.1 Hong Kong CAD endeavors to provide safe, orderly and expeditious Air Traffic Services under all circumstances. The switchover of ATC operations may affect adjacent ACCs to a certain extent. The understanding and support from all working counterparts are essential for the successful implementation of new ATC systems in Hong Kong.

4. ACTION BY THE MEETING

- 4.1 The meeting is invited
 - 4.1.1 to note the information provided on this paper.
 - 4.1.2 to actively participate in the discussion of HK ATC operation cutover related issues affecting adjacent ACCs in future.

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