*International Civil Aviation Organization*

**Eleventh Meeting of the Asia/Pacific Air Traffic Flow Management Steering Group (ATFM/SG/11)**

Video Teleconference, 2 – 6 August 2021

**Agenda Item 4: Review of Current CDM/ATFM Operations and Problem Areas**

# GROUND DELAY PROGRAMME OPERATIONAL TRIALS AT HONG KONG INTERNATIONAL AIRPORT

(Presented by Hong Kong China)

**SUMMARY**

This paper presents the Ground Delay Programme (GDP) operational trials initiated by Hong Kong China at Hong Kong International Airport (HKIA) and the related Post Operation Analysis (POA).

## 1. INTRODUCTION

1.1 With the traffic downturn due to COVID-19 pandemic, the lower air traffic volume reduces the chances for ATFM measures to be initiated for traffic landing at HKIA.

1.2 In order to provide continuous training and familiarization to Hong Kong Air Traffic Flow Management personnel and regional partners for cross-border ATFM, Hong Kong China had initiated regular GDP operational trials of duration once or twice per month since January 2021. During the operational trials, Calculated Take-Off Time (CTOT)s were distributed to Asia/Pacific Cross Border Multi-Nodal ATFM Collaboration (AMNAC) States and East-Asia Air Traffic Management Coordination Group (EATMCG) members.

## 2. DISCUSSION

2.1 For the first half of this year, a total of 9 GDP operational trials were conducted involving about 210 flights who were subjected to the programme.

2.2 Since there was no genuine demand & capacity imbalance at HKIA, all CTOTs distributed by Hong Kong China during the operational trials were of no delay CTOTs (i.e. CTOT-Estimated Take-Off Time (ETOT) = 0).

2.3 As an AMNAC level 3 core team member, Hong Kong China follows the Asia-Pacific ATFM POA Recommended Framework and issues POA to trial participants including ATFM Units and Aircraft Operators (AO). The objectives of the POA are to analyze the CTOT compliance, to follow up with AO on the reason for early or late non-compliance, to share lessons learnt and to develop best practices for further streamlining of the operations.

POA Metrics

*Demand Look-Ahead – Flight Plan (FPL) Submission Lead Time*

2.4 During the operational trials, it was found that the average FPL submission lead time was about 240 minutes which is more than the requirement of 180 minutes stated in the Hong Kong AIP. However, there were **24%** of the flights had their FPL submitted with lead time less than 180 minutes. Results of the analysis had been passed to relative AOs for improvement.

2.5 It is important to note that non-compliance to FPL submission requirement will lead to no CTOT being assigned because Hong Kong ATFM system will not distribute CTOT for any flight without a FPL. Therefore, the timely submission of FPL is vital in securing a departure slot during GDP implementation at HKIA.

*Demand Accuracy – Pre-tactical Demand Accuracy*

2.6 The accuracy of the demand is essential as it affects the overall planning and operations. Below is an analysis of demand accuracy during operational trials based on the average of absolute difference:

- Actual Take-Off Time (ATOT) & ETOT is **13 minutes**.
- Actual Landing Time (ALDT) & Estimated Landing Time (ELDT) is **15 minutes**.
- Actual Elapsed Time (AET) & Estimated Elapsed Time (EET) is **6 minutes**.

2.7 Based on the above, the accuracy of demand is within the expectation and is good for air traffic demand prediction. Nevertheless, the true picture can only be seen when air traffic recovers to a certain level.

*CTOT Delivery Lead Time*

2.8 In order to deliver the most accurate CTOT with reference to the latest air traffic situation and to minimize the number of CTOT revisions, Hong Kong China usually sends out CTOTs as late as 90 minutes prior to the EOBT and in batches every 30 minutes which is a different approach to other ATFMUs. Therefore, the delivery lead time may vary with the workload of the ATFM personnel and the FPL submission lead time.

2.9 This has worked smoothly because Hong Kong China has a target of delivering CTOT at 90-120 minutes prior to the EOBT of the constrained flights. From the analysis, it is found that the average CTOT delivery lead time was **110 minutes,** which met the set target.

*CTOT Compliance Assessment and its Trend*

2.10 The Overall CTOT Compliance for the first half of this year was **80.4%**. (Note: Compliance figures may not reflect the true performance due to the impact of the COVID-19 pandemic in other ATFM Units.)

2.11 The individual CTOT compliance by ATFM Units and the monthly CTOT compliance is shown in **Figure 1** and **Figure 2** respectively.

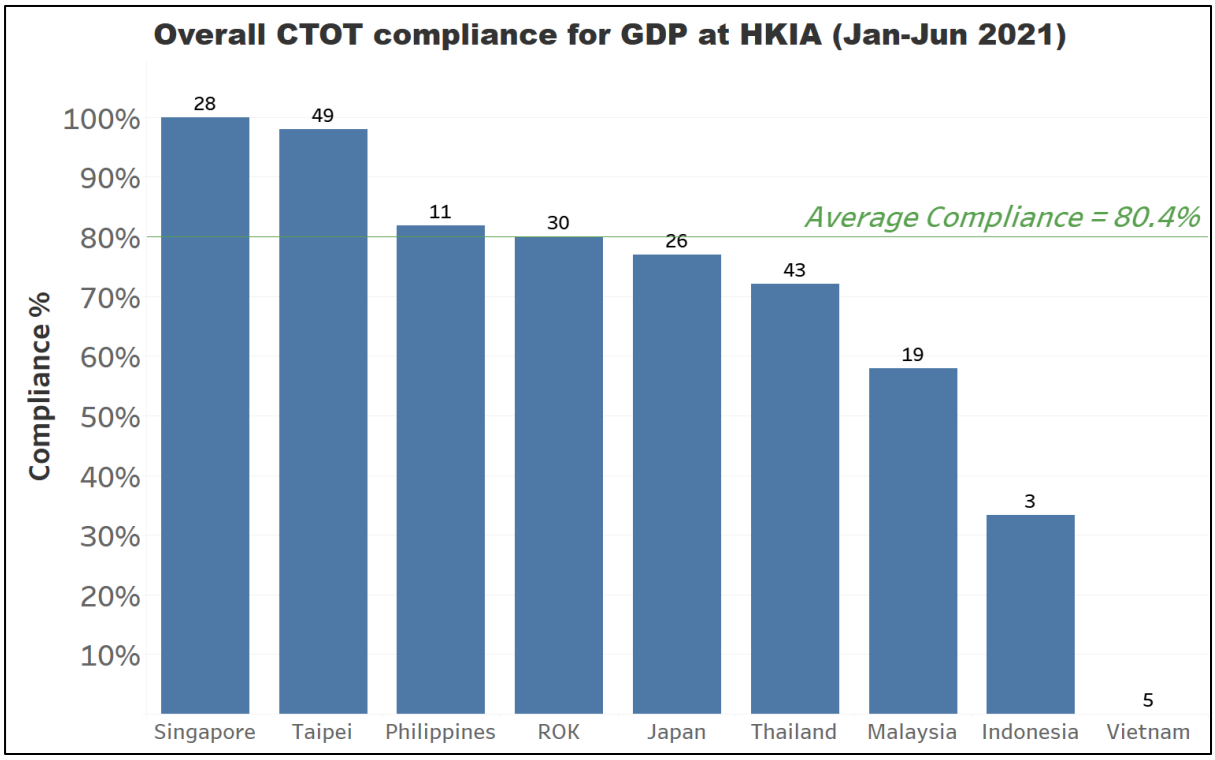


Figure 1

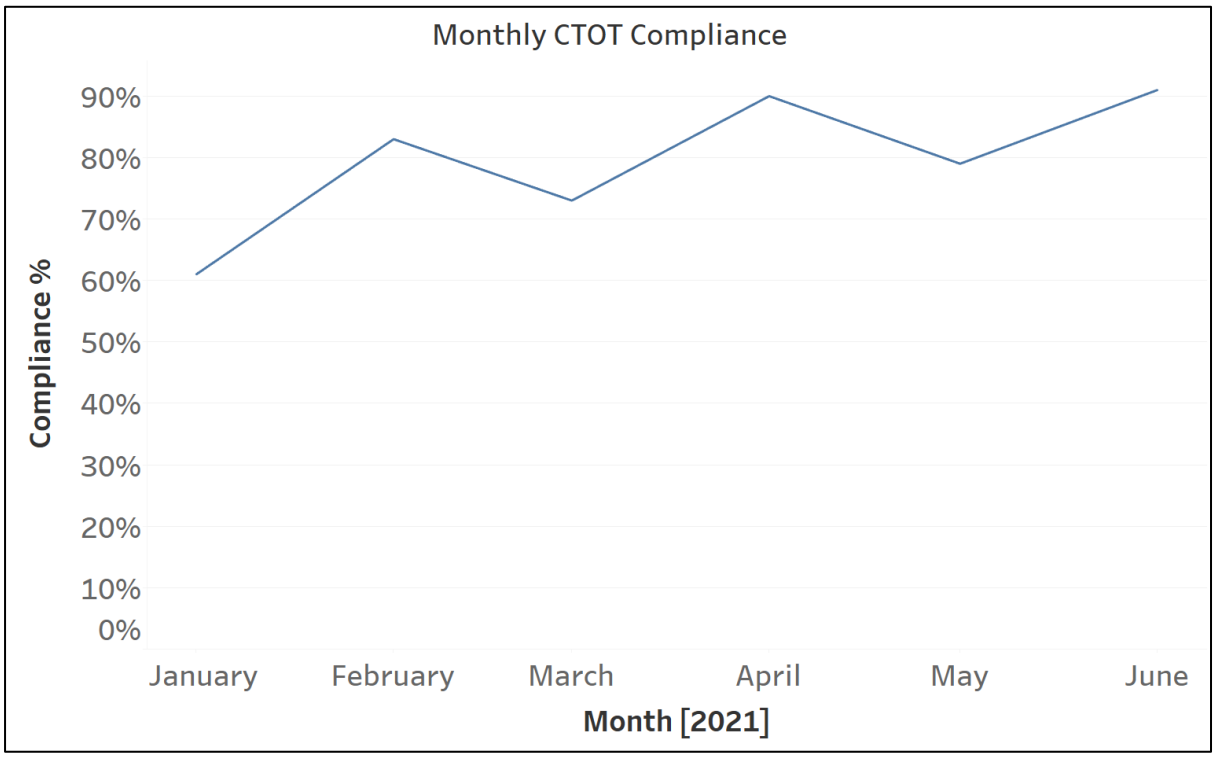


Figure 2

2.12 The CTOT compliance by local operators is shown in Figure 3.

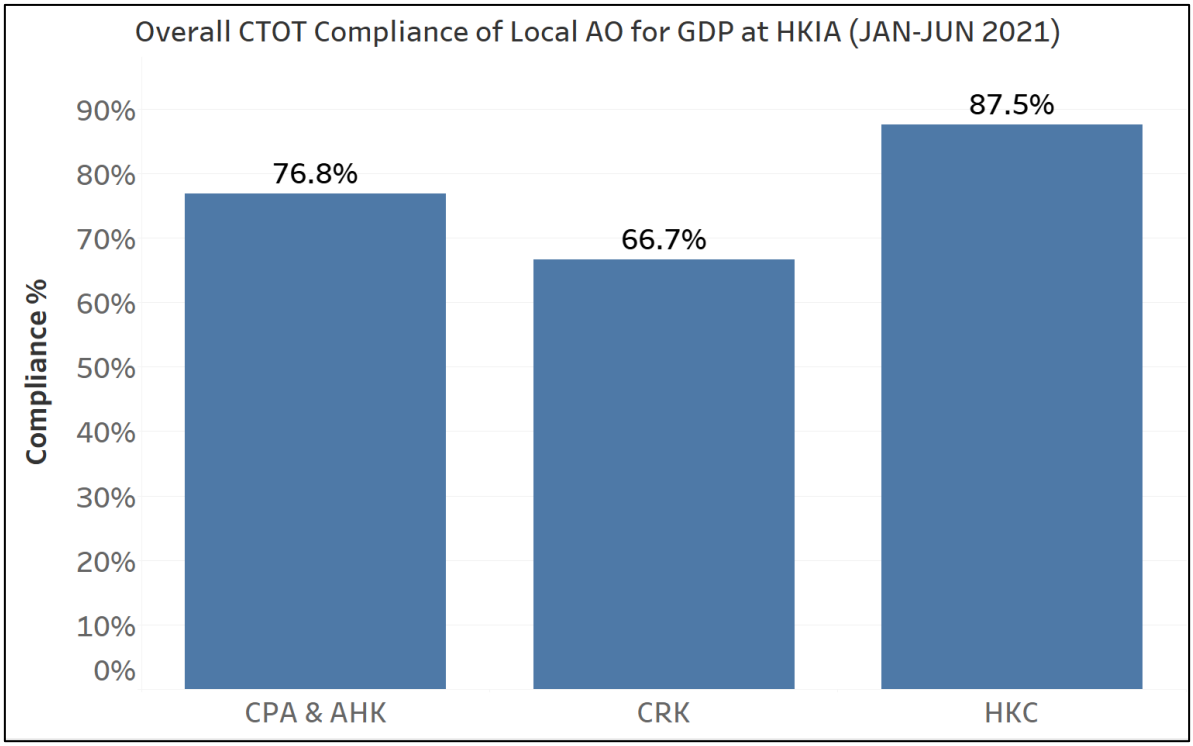


Figure 3

Conclusion

2.13 The operational trials have proven to be an important activity to validate the ATFM concept and procedures, for ATFM personnel to maintain currency in common operating procedures and to provide training opportunities.

2.14 From ATFM perspective, it is a known fact that the higher the compliance rate, the greater benefits to the whole network. Therefore, it is of paramount importance to treat every CTOT issued as genuine and comply with them accordingly.

2.15 The successfulness of a GDP and hence the efficiency of the APAC ATFM network relies on the effort of every participating state and AO.

2.16 The monthly GDP operational trial is expected to continue until the end of 2021. The frequency of the trial may be adjusted depending on the air traffic recovery situation.

## 3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper;

b) continue supporting Hong Kong China's monthly GDP trials;

c) encourage members to make reference to Hong Kong China's initiative and share their experience; and

d) discuss any relevant matters as appropriate.

…….