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Thirteenth Meeting of the Asia/Pacific Air Traffic Flow Management Steering Group (ATFM/SG/13)

Bangkok, Thailand, 03 – 07 April 2023

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

CROSS-BORDER ATFM/CDM COLLABORATION RELATED TO THE KOREAN SAT

(Presented by the Republic of Korea, China, Japan, Hong Kong China)

SUMMARY

This paper presents the Cross-border ATFM/CDM collaboration between the Republic of Korea, China, Japan, and Hong Kong China for the Korean SAT event by engaging in collaborative decision making to apply CTO/CTOT/MINIT measures.

1. INTRODUCTION

1.1 The Republic of Korea (ROK) holds a College Scholastic Ability Test (Korean SAT) every November. During the listening comprehension test, all aircraft in Incheon FIR are prohibited from taking off and landing not to disturb students for about 50 minutes, which can cause airborne holdings.

1.2 On the day of the Korean SAT last year, in order to prevent airborne delays and holdings for arrival flights, the Air Traffic Command Center (ATCC) implemented ATFM measures for international flights as well as for domestic flights. Especially for international arrivals, ROK was able to reduce airborne delays and holdings in cooperation with China, Japan, and Hong Kong China.

2. DISCUSSION

ATFM Planning

2.1 Over the past few years, as international traffic volumes decreased due to the COVID-19 pandemic, the ATCC did not implement ATFM initiatives during the Korean SAT. However, since last year, international traffic volumes have gradually recovered. Airspace Users (AUs) were advised in advance to adjust their schedules to avoid the take-off and landing prohibition times. ROK identified the Estimated Landing Time (ELDT) based on the adjusted schedule data and found out that some flights would be caught up in the take-off and landing prohibition times. The flights subject to ATFM measures were determined in advance in cooperation with the neighboring States (China, Japan, and Hong Kong China) ATFM measures for each state were established through collaborative decision-making. In addition, the ATFM plan was shared with stakeholders including Air Navigation Services Providers (ANSPs), and AUs through several on-line meetings.

CTO operation with China

2.2 Northeast-Asia Regional ATFM Harmonization Group (NARAHG) developed its Concept of Operations (CONOPS) in May 2020. In the NARAHG CONOPS, the ATFMU that has jurisdiction over the concerned FIR calculates CTOT and CTO for the affected flight based on the coordinated time at the FIR boundary (ETO) which is shared by upstream ATFMUs.

2.3 In the ATFM planning phase, ROK and China agreed on CTO operation for Korean SAT ATFM. In the strategic phase (more than one week prior to the day of operation), ROK and China shared the ATFM outline time period, predicted an approximate number of affected flights and ATFM delays, and agreed to exempt long-haul flights from CTO operation. In the pre-tactical phase (one day to one week prior to operation), ROK and China hashed out the details on how to operate CTO and had training in exchanging ETO/CTO via e-mail. In the tactical phase (on the day of operation), ROK provided the regulated flight list, China provided ETOs for the flights, ROK issued CTOs, and China updated ETOs in line with CTOs. As the first cross-border CTO trial, ROK and China were exempted from CTO compliance duty.

2.4 ROK issued five CTOs for flights to China. Data tolerance (ATO-CTO) was, on average, 13.2 minutes. All five flights avoided take-off and landing prohibition time and approached RKSI without airborne holdings.

MINIT operation with Japan

2.5 In the ATFM planning stage, ROK and Japan agreed on the MINIT (Minutes In Trail) operation for the Korean SAT. Since most flights rescheduled their arrival time after the take-off and landing prohibition times, traffic dispersion measures were needed to prevent bottlenecks right after the take-off and landing prohibition was lifted. In the strategic phase, ROK and Japan shared the ATFM outline time period and estimated the number of affected flights and ATFM delays. In the pre-tactical phase, ROK and Japan set out detailed intervals for MINIT and conducted training in exchanging ETO via e-mail. In the tactical phase, ROK provided the regulated flight list and Japan provided ETOs for the flights. ROK issued MINIT at boundary fixes, “SAPRA” and “INVOK”, for three and six minutes respectively.

2.6 There were a total of ten flights captured in the MINIT operation. The ATFM delays were on average 24 minutes. All ten flights avoided take-off and landing prohibition time and approached RKSI without airborne holdings.

CTOT operation with Hong Kong China

2.7 ROK and Hong Kong China have carried out GDP since 2021. Based on trial experiences, ROK and Hong Kong China agreed to conduct CTOT operations for flights departing from Hong Kong International Airport (VHHH) to RKSI during the Korean SAT. The overall ATFM collaboration process was carried out in accordance with the Multi-Nodal ATFM Concept of Operations.

2.8 There were a total of two flights captured in the CTOT operation from VHHH to RKSI. The overall compliance rate was 100% and ATFM delays were on average 15 minutes. All two flights avoided take-off and landing prohibition time and approached RKSI without airborne holdings.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information outlined in this paper;
- b) suggest ways to improve the predictability and clarity of the ATFM process through collaborative decision making between upstream and downstream ATFMUs; and
- c) discuss any relevant matters as appropriate.

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