



International Civil Aviation Organization
ICAO **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

RESUMING CTO TRIALS WITHIN FUKUOKA FIR

(Presented by Japan)

SUMMARY

This paper introduces that Japan resumed trial operation within Fukuoka FIR to implement Calculated Time Over (CTO) operations that assign specific FIX crossing time to in-flight aircrafts as Demand Capacity Balancing (DCB) measure.

1. INTRODUCTION

1.1 Currently the delays are mainly imposed on aircraft departing from domestic airports. Japan started CTO trial operation for inbound flights from other FIRs within Fukuoka FIR in order to validate whether it is possible to equally allocate the delays to aircraft from other FIRs.

1.2 The trial operation began in August 2011, however, it was suspended in September 2014 due to operational limitations in the former ATM system and imprecision of ETA calculated by the system.

1.3 Japan considered resuming trial operations because the ATM system had been updated to the new system in January 2020 and the system restrictions had been lifted.

2. DISCUSSION

Consideration for resumption of trial

2.1 The accuracy of ETA and operation procedures have been examined more than 3 years since 2017, except the period of the trial suspended, based on industry-government-academia collaboration. Besides, JCAB conducted preliminary verification twice, from September to December 2020 and from June to July 2021 in preparation for the resume of the trial.

2.2 As a result of the preliminary verification, JCAB identified the facts as below;

- a) ETA calculated by ATC system remained inaccurate. Therefore, CTO compliance could not be achieved only by speed adjustment.
- b) There were some aircraft flying at speed significantly different from those filed in flight plan.
- c) Some aircraft changed its speed significantly in flight.

2.3 The trial operation was started on March 23, 2023 based on the results of the review, in which ATC issues speed instructions according to the range of speed adjustment by calculating delay time instead of specifying CTO.

Objectives of the CTO operations

2.4 The purposes of implementing CTO operations within Fukuoka FIR are as follows;

- a) To share the delay between domestic flights and international flights.
- b) Enhance the balance between airspace capacity and traffic flow,
- c) Reduce airborne holdings and excessive radar vectors.
- d) Consequently, reduce fuel consumption and improve operational efficiency.

Operation Procedure

2.5 Aircraft that are bound for Tokyo International Airport (RJTT), plan the specific routes and fly at or above FL335 at the time of CTO calculation.

- a) At a specified time prior to ETA of CTO FIX, ATC instructs a speed that considers the difference between CTO and ETA calculated by ATC system.
- b) ATC lets the subject aircraft fly along the flight plan route as far as possible.

Post operation analysis of CTO trial operation

2.6 The results of the following post operation analysis will be gathered and used to examine the achievement of the objectives and to examine the introduction of time management measures in the future, starting with the operation under the original procedure of assigning the specific FIX crossing time.

- a) Confirm reduction of controllers workload and delays for domestic flights.
- b) Verify ETA accuracy of ATC system by providing speed instructions.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) refer to the trial operation within Fukuoka FIR to strengthen long range ATFM cooperation; and
- c) discuss any relevant matters as appropriate.

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