



International Civil Aviation Organization

The Fifth Meeting of ICAO Asia/Pacific Air Traffic Flow Management Steering Group (ATFM/SG/5)

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Agenda Item 5: Development of Regional ATFM Framework

THE TRIAL OPERATION RULES FOR THE COLLABORATIVE FLIGHT DELIVERY MANAGEMENT

(Presented by CHINA)

SUMMARY

This paper presents the trial operation rules for the collaborative flight delivery management, a way of CDM/ATFM implemented in mainland China. The rules includes the duties of provide information, the principles of SLOTS management such as slot allocation, dissemination, confirmation and swapping.

1. INTRODUCTION

1.1 Since 2013, the CAAC launched the "collaborative flight delivery management" as the main approach of CDM/ATFM in China civil aviation transportation, which preliminary realized the goal of reducing flight delays, avoiding flight passengers' long time waiting in the cabin etc. The ATMB CAAC developed a set of operation rules, which has been applied to the process of collaborative flight delivery management, has played a good role. At present, the operation rules are continually being improved.

1.2 The operation rules are collective discussed and approved by all CDM/ATFM participants. The parties shall bear the corresponding responsibilities in accordance with the rules. This document gives an example of the specific content of operation rules in detail.

1.3 The "operation rules" described in this paper mainly includes the following content:

- a) The duty of provide information for all the participants
- b) The principles of slot allocation, dissemination and compliance.
- c) For the airspace user, mainly the aircraft operators, the duty of slot confirmation, swap, and providing flight delay or cancel information.

2. DISCUSSION

Information Provided

2.1 The operational environment data, information related to the whole life cycle of a flight, and those have impact on the flight shall be provided in a collaborative manner. ANSP, AU, AO shall provide information such as (include, but not limited to)

- a) For ANSP: airport AAR/ADR for the next 3 hours, Traffic management initiatives such as GSP/MIT, the CTOT/COBT for those regulated flights;
- b) For aircraft operator: information of flight delay, cancel and airframe change. For those participants with data-exchange capability, the expected / actual time for the flight ground handling key events such as in-block / off-block, embark start / accomplish, cabin door close, push-back etc...
- c) For airport Authority: gate / parking bay utilization plan, in-block / off-block time etc...

Timing when SLOT allocation starts

2.2 Slot such as CTOT, COBT will be calculated and disseminated for those regulated flights. Once the FPLs of these flights is submitted, the SLOT will be calculated. The earliest timing is 2 hours before the EOBT.

TOBT estimating

2.3 In order to facilitate the SLOT allocation, TOBT is estimated automatically for reference.

2.4 The airframe is used to correlate the arrival flight with the departing flight. TOBT for the departing flight is generated and updated depending on the information from the AFTN message, radar for the arrival flight and the update of the key events of the turn-around process.

2.5 Participants who have interactive connectivity to the ANSP shall optimize the TOBT according to the ground handling schedule. If no update of turn-around ground handling process is achieved, the ALDT, nominated taxi-in time, and the minimal turn-around time required are used to estimate the TOBT.

2.6 An automatic real-time comparison of COBT and TOBT are undergoing all the time. when TOBT is later than COBT, for the participant who has interactive connectivity to the ANSP, an alert is activated and the user shall confirm the COBT feasibility or change TOBT in 15 minutes, otherwise, the SLOT will be re-allocated.

Rules of SLOT allocation

2.7 Facts as the nature of the flight, the TMIs, the SOBT and EOBT will be considered in SLOT allocation. The sequence of those regulated flights over the specific point will be generated, and the CTO for specific flight will be calculated and updated as necessary. The CTOT / COBT is calculated accordingly.

2.8 The TMIs from the destination airport have priority over the restriction from the airspace cells.

Priority

2.9 For those flights with same SOBT and suffered from same restriction, the following priority order will be adopted:

- a) VIP flight
- b) International flight
- c) Connecting flight domestic to international
- d) Flights suffered 2 hours delay or more
- e) Aircraft passenger capacity

Exemption

2.10 According to ICAO DOC9971, the following aircraft is exempted:

- a) Emergency flight (Including Unlawful interference)
- b) State flight
- c) Humanitarian/ SAR/ Fire fighting flights
- d) Medivac flights (only when declared medivac) etc.
- e) Other flights specifically identified by State authorities.
- f) Diversion Recovery Flight.

SLOTs dissemination

2.11 CTOs / CTOTs / COBTs are disseminated to the ATC unit concerned VSP (default 90 min) before EOBT; COBTs are disseminated to the relative AOs / AUs at this time.

SLOTs Confirmation

2.12 It is the AOs' duty to confirm the SLOTs allocated to their flight. The unconfirmed SLOT is expired VSP (default 55 min) before COBT. And at this time, the flight is removed to the suspending list.

SLOTs Stabilization

2.13 In order to improve the stability Performance of SLOT allocation, the confirmed COBT is frozen VSP (default 55 min) before COBT, unless the flight is subject to a new TMI from that time on. Once the CTOT is VSP (default 25 min) or less from current time, it is locked, unless the TMI become worse.

Slots compliance

2.14 COBT compliance: before COBT+5min, +5min

2.15 CTOT compliance tolerance: -5, +5min

Provide delay / cancel information

2.16 When aircraft operator report the flight-cancel or merge of flights, other flight of the same airlines has the priority to use that released SLOT.

2.17 In case delay is expected due to ground-handling issues or previous flight-leg late, AO shall advise the new EOBT to ANSP via AFTN message or telephone. For those AO who have interactive connectivity to the ANSP, new TOBT shall be advised.

2.18 AO is encouraged to provide the anticipated delay information to ANSP as early as possible.

Delay information handling

2.19 New EOBT / TOBT is recorded for revision. If the new EOBT / TOBT is not late than the COBT, the COBT remain unchanged, otherwise SLOT re-allocation is active. New SLOT is calculated according to the timing when delay information is advised:

- a) For those 55min or early than COBT, new SLOT is calculated as the FCFS principle.
- b) For those 55min through 15 min before COBT, those un-used SLOT will be searched and allocated, SLOT swap is an alternative way. Otherwise the earliest suitable one after those confirmed SLOTS is allocated to that flight.
- c) For those 15min before COBT or late, SLOT swap is considered by ATC tower. Otherwise, the earliest suitable one after those confirmed SLOTS is allocated to that flight.
- d) For those late than COBT or not advised, follow the rules of suspending list.

SLOTS swap

2.20 55min before COBT or earlier, AO can initiate SLOT swap for flights of his own. Late on, ATFM unit can initiate SLOT swap for flight in his jurisdiction. ATFM unit at ATC tower can swap SLOT for flight at his airport.

2.21 Only those flights subject to the same TMI is suitable for SLOT swap.

Suspending list

2.22 A flight is move to the suspending list when:

- a) For the participant who has interactive connectivity to the ANSP, no confirmation for COBT is made and no revision of EOBT / TOBT is advised for his flight 55min before that COBT, or
- b) Ground-handling is not accomplished, and no revision of EOBT / TOBT is advised for his flight by the time of COBT, or
- c) For the participant who has no interactive connectivity to the ANSP, no DEP information is received 30min late than CTOT, or
- d) During push-back and late on, the flight paused for some reason , and no TTOT can be expected, or

- 2.23 A flight is remove from the suspending list when:
- a) When airline operators or aircrews offer a new EOBT/TOBT (the time should be later than current time), the system will reorder this flight according to the rules of punishment (to be determined) and sequence. The flights will get out from waiting pool automatically and enter the queue. But it should not take the place of the slots which have already been confirmed to be occupied by other flights.
 - b) If the flight is under the condition of pushing back or taxing, tower controller will input the TTOT manually after aircrews offers a new TTOT, and make coordination with the next control unit or manually trigger the system to reorder this flight.
 - c) Manually operated by ATFM;

SLOTs allocation contingency management

- 2.24 In case the TMI change worse suddenly, to put the airborne flights and those flights in taxiing, pushed-back, or reported ready in priority.
- a) Taken off (DEP)
 - b) Lined-up or holding (LIN or QUE)
 - c) Taxiing (TAX)
 - d) Pushed back (P_S)
 - e) Already published COBT and be confirmed
 - f) Others

3. ACTION BY THE MEETING

- 3.1 The meeting is invited to:
- a) note the information contained in this paper; and
 - b) propose that ICAO consider to add the experience of CAAC to the ATFM framework of APAC;
 - c) discuss any relevant matters as appropriate.

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