INTERNATIONAL CIVIL AVIATION ORGANIZATION

TWENTY SEVENTH MEETING OF THE ASIA/PACIFIC AIR NAVIGATION PLANNING AND IMPLEMENTATION REGIONAL GROUP (APANPIRG/27)

Bangkok, Thailand, 5 to 8 September 2016

Agenda Item 3: **Performance Framework for Regional Air Navigation Planning and Implementation**

3.2: **ATM**

STANDARDIZATION OF BOBCAT ATFM TERMINOLOGIES

(Presented by Thailand)

SUMMARY

Pursuant to the outcome of ICAO ATFM/SG/6 and the publications of ICAO Doc 9971 – Manual on Collaborative ATFM as well as Asia-Pacific Regional Framework for Collaborative ATFM, a decision has been proposed for the standardization of BOBCAT ATFM terminologies to align with those of global standards. This includes the introduction of Calculated Take Off Time (CTOT) and Calculated Time-Over (CTO) in place of the existing AWUT and ETO. This paper suggests actions to be taken by States / Administrations to harmoniously implement the changes in documentations, system, and radiotelephony phraseologies.

Strategic Objectives:

A: ***Safety*** *– Enhance global civil aviation safety*

B: ***Air Navigation Capacity and Efficiency****—Increase the capacity and improve the efficiency of the global aviation system*

E***: Environmental Protection*** *— minimize the adverse environment effects of civil*

1. INTRODUCTION

1.1 Since 2014, ICAO has published the Second Edition of Doc 9971 – Manual on Collaborative ATFM as a guideline for States and Administrations planning to implement Air Traffic Flow Management (ATFM) service in their jurisdiction. The ATFM Subgroup of ICAO Air Traffic Management Operations Panel (ATMOPSP) is now in the process of revising the document, and the Third Edition of Doc 9971 is expected to be published in Q1 – 2017. A great emphasis is put in the document on the far-reaching effects of an ATFM measure and the importance of global harmonization between different regions' ATFM initiatives, including the terminologies used in ATFM communications. A glossary of standard ATFM terminologies will be included as part of the Third Edition of Doc 9971 to encourage standardization of ATFM terminologies across the globe.

1.2 Additionally, ICAO Asia-Pacific ATFM Steering Group (ATFM/SG) has also collaboratively worked over the past few years to publish Asia-Pacific Regional Framework for Collaborative ATFM (now accessible on ICAO APAC website), with the aim of harmonizing the implementation of ATFM services and driving the cross-border ATFM initiative in the region. A glossary of standard ATFM terminologies is also included in the document as an **Appendix.**

1.3 Consequently, at the 6th meeting of ICAO ATFM/SG (ATFM/SG/6), the meeting agreed that actions should be taken to revise ATFM terminologies used for BOBCAT ATFM operations to better align with the abovementioned global standards. This paper proposes actions for States / Administrations to collaboratively take in that terminologies revision.

2. DISCUSSION

2.1 Since 2007, the ATFM service has been provided by Aeronautical Radio of Thailand Ltd (AEROTHAI) for flights transiting the Kabul FIR westbound during the period of 2000 – 2359 UTC daily through the Bangkok Air Traffic Flow Management Unit (Bangkok ATFMU). Through the BOBCAT system, Bangkok ATFMU has been allocating entry slots into Kabul FIR which consist of the Allocated Wheels-Up Time (AWUT), flight level, ATS route, and entry time to ensure flights are transiting through the Kabul FIR in a safe and smooth manner.

2.2 To ensure alignment with the global ATFM standards and to comply with ATFM/SG's decision as abovementioned, Thailand plans to introduce new standard ATFM terminologies in place of the existing ones in all documentations, BOBCAT system, procedures, and radiotelephony phraseologies. Key terminologies introduced include the following:

New Terminologies	Definition	Replacing
Calculated Take-Off Time (CTOT)	Take-Off time allocated to the flight by BOBCAT	Allocated Wheels-Up Time (AWUT)
Calculated Time Over (CTO)	Time at which a flight should expect to arrive at Kabul FIR entry waypoint ***CTO = CTOT + EET to Kabul FIR***	Estimated Time Over (ETO)
Allocated Slot	An allocated slot will consist of CTOT, CTO at Kabul FIR entry waypoint, FL, and ATS route	

2.3 In addition, Thailand also plans to revise other aspects of all relevant documentations to better align with the global standards. These other aspects include, *inter alia*, clause specifying exemption of flights from ATFM procedures.

2.4 To ensure stakeholders' awareness of the change and smooth transition to the use of new terminologies, Thailand would like to propose a joint publication of revised AIP or AIP Supplement with harmonized activation timeline. A template for the joint AIP / AIP Supplement, with revised terminologies and clauses, is attached as **Appendix A** to this paper.

2.5 The timeline for the publication and activation of new terminologies will have to take into account the lead times necessary for all relevant States / Administrations to process AIP / AIP Supplement. Thailand will liaise with States / Administrations to process changes in a coordinated manner.

3. ACTION BY THE MEETING

3.1 The meeting is invited to note the information contained in this paper.

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APPENDIX: JOINT AIP / AIP SUPPLEMENT TEMPLATE

Note 1: Texts highlighted in yellow are those that differ significantly from the existing AIP / AIP Supplement
Note 2: Texts in red are those that may be State-specific

A. ATFM PROCEDURES OVER BAY OF BENGAL, SOUTH ASIA AND PAKISTAN THROUGH KABUL FIR

A.1 Provision of ATFM Services for Flights Transiting Kabul FIR (BOBCAT ATFM)

A.1.1 As one of the ATFM services provided, Bangkok Air Traffic Flow Management Unit (Bangkok ATFMU) provides ATFM service for flights intending to transit Kabul FIR between 2000 UTC and 2359 UTC daily. The service provided includes calculation, promulgation, and management of mandatory Calculated Take-Off Time (CTOT) and flight level, ATS route, and Calculated Time-Over (CTO) at entry waypoint for entry into Kabul FIR for each affected flight.

A.1.2 Air Navigation Service Providers (ANSPs) retain responsibility for the tactical management of flights that are subjected to this ATFM measure. In discharging tactical responsibilities, ANSPs will manage non-ATFM compliant flights using delayed pushback and start clearances, non-preferred routes and/or flight levels, enroute holding and/or diversion around Kabul FIR.

A.1.3 Bangkok ATFMU utilizes the automated, web-based Bay of Bengal Cooperative ATFM System (BOBCAT) in meeting its Kabul FIR ATFM responsibilities. These responsibilities will be managed in coordination with aircraft operators and ANSPs in the FIRs concerned.

A.1.4 The following subsection A.2 of this section describes in greater detail the procedures involved in this ATFM service. The objectives of this service are to:

- Reduce ground and enroute delays;
- Maximize capacity and optimize air traffic flow through Kabul FIR;
- Provide an informed choice of routing and flight level selection;
- Alleviate unplanned in-flight re-routing and technical stops; and
- Assist regional ANSPs in planning for and managing workload in handling increased air traffic flow through Kabul FIR.

A.2 BOBCAT ATFM-Affected ATS Routes, Flight Levels, and Applicable Period

A.2.1 All westbound flights intending to enter the Kabul FIR between 2000 UTC and 2359 UTC daily on ATS routes A466, L750, N644 from FL280 to FL390 inclusive and G792 / V390 from FL310 to FL390 inclusive shall comply with the BOBCAT ATFM procedures contained herein. This includes a mandatory requirement for all flights to obtain a specific ATFM slot allocation – CTOT, CTO at Kabul FIR entry waypoint, allocated flight level, and allocated ATS route – from the Bangkok ATFMU for entry into Kabul FIR during the period abovementioned.

A.2.2 Flights that plan to enter Kabul FIR without an ATFM slot allocation – CTOT, CTO at Kabul FIR entry waypoint, allocated flight level, and allocated ATS route – will be accommodated only after flights with slots have been processed. Such flights should

expect delayed pushback and start clearances, non-preferred routes and/or flight levels, enroute holding and/or diversion around Kabul FIR.

A.2.3 In order to ensure availability of slots for westbound departures from designated airports in northern India and Pakistan, departures from these airports are given priority for FL280 in the slot allocation. This does not preclude these flights from requesting higher flight levels with initial slot request

A.3 Flights Exempted from BOBCAT ATFM

A.3.1 The following flights are exempted from the BOBCAT ATFM procedures:

- Flights experiencing an emergency, including aircraft subjected to unlawful interference;
- Flights on search and rescue or fire fighting missions;
- Urgent medical evacuation flights or humanitarian flights specifically declared by State medical authorities that flight delays would put the life of patients aboard at risk; and
- Flights with "Head of State" status.

A.3.2 Flights exempted from ATFM procedure shall indicate the exemption in their flight plan (Field 18 – ATFM EXMP)

A.3.3 AIS Centers, Aerodrome Aeronautical Information Services Units or Base Operations shall forward the flight plan information to the Bangkok ATFMU at AFTN address VTBBZDZX

A.4 Mandatory CTOT and Kabul FIR Slot Allocation

A.4.1 Affected flights shall obtain the mandatory Kabul FIR slot allocation – CTOT, CTO at Kabul FIR entry waypoint, and allocated flight level and ATS route – from the BOBCAT system. The Kabul FIR slot allocation will enable ANSPs to tactically control westbound flights transiting the Kabul FIR at specified times by assigning minimum spacing requirements at established gateway waypoints in the vicinity of the eastern boundary of the Kabul FIR.

A.4.2 The application, calculation, and distribution of CTOT and associated Kabul FIR entry waypoint slot allocations will be managed via internet access to the BOBCAT system in accordance with the BOBCAT ATFM operation procedure in section A.5

A.5 BOBCAT ATFM Operating Procedures

A.5.1 All affected flights are required to submit slot requests to the BOBCAT system by logging into https://www.bobcat.aero between 0001 and 1200 UTC on the day of flight and completing the electronic templates provided.

A.5.2 Affected operators who do not have dedicated BOBCAT username / password access should complete the attached application form in Appendix A and fax the form to the ATFMU as soon as possible.

A.5.3 Slot Allocation Process

A.5.3.1 The slot allocation is divided into 3 phases, namely; the slot request submission, initial slot allocation, and slot distribution to aircraft operators and ANSPs.

A.5.4 Slot Request Submission

A.5.4.1 Slot requests including preferred ATS route, flight level and Maximum Acceptable Delay (MAD) should be lodged between 0001 UTC and 1200 UTC on the day of flight. Slot requests may subsequently be amended prior to the cut-off time of 1200UTC. Aircraft operators are encouraged to submit additional slot request options in case their first choice is not available. This may include variations to ATS route, flight level and MAD.

A.5.4.2 Slot requests shall be for flight parameters that are able to be met by the flight. For example, flights requesting a slot at FL390 must be able to transit Kabul FIR at FL390. Flight subsequently unable to meet slot parameters (flight level, ATS route, or CTO at entry waypoint) should expect non-preferred routes and/or flight levels, enroute holding and/or diversion around Kabul FIR.

A.5.4.3 As BOBCAT will allocate FL280 on a priority basis to facilitate departures from northern India and Pakistan underneath over-flying traffic, flights departing these airports are encouraged to include FL280 as at least one slot request preference.

A.5.4.4 Flights that were not allocated a slot in the initial slot allocation, are not satisfied with the allocated slot or did not submit a slot request should select slots from the listing of remaining unallocated slots available immediately after slot distribution has been completed.

A.5.5 Slot Allocation and Distribution

A.5.5.1 Slot allocation will commence at the cut-off time of 1200 UTC. BOBCAT will process and generate the slot allocation based on the information submitted in the slot requests. Notification of slot allocation will be made not later than 1230UTC via the ATFMU website. Alternative arrangements for notification of slot distribution (e.g. Fax, Telephone, E-mail) should be coordinated with the ATFMU.

A.5.5.2 After the slot allocation has been published at https://www.bobcat.aero, aircraft operators can:

(a) Use the slot allocation result for ATS flight planning purposes,
(b) Cancel the allocated slot and/or,
(c) Change slot allocation to another available slot in the published list of unallocated slots.

A.5.5.3 ATS Units involved (e.g. *Area Control Centre, Aerodrome Control at the departure airports, AIS Centres, Aerodrome Aeronautical Information Services Units and Base Operations*) can also view the slot allocation results at https://www.bobcat.aero

A.5.6 Submission of ATS Flight Plan

A.5.6.1 Once aircraft operators are in receipt of the slot allocation, they shall submit the ATS flight plan using the time, ATS route and flight level parameters of the BOBCAT allocated slot.

A.5.6.2 In addition to normal AFTN addressees, operators should also address flight plan (FPL) and related ATS messages (e.g. DLA, CNL, CHG) to the ATFMU via AFTN address VTBBZDZX for all flights that have submitted a slot request.

A.6 Aircraft Operator / Pilot-in-Command and ANSP Responsibilities

Aircraft Operator / Pilot-in-Command

A.6.1 In accordance with ICAO PANS ATM provisions, it is the responsibility of the Pilot-in-Command (PIC) and the aircraft operator to ensure that the aircraft is ready to taxi in time to meet any required departure time. PIC shall be kept informed by their operators of the CTOT, CTO at Kabul FIR entry waypoint, and flight parameters (route, flight level) allocated by BOBCAT.

A.6.2 The PIC, in collaboration with ATC, shall arrange take-off as close as possible to CTOT in order to meet the allocated CTO at Kabul FIR entry waypoint.

ANSPs

A.6.3 In accordance with ICAO PANS ATM provisions, flights with an ATFM slot allocation should be given priority for take-off to facilitate compliance with CTOT.

A.6.4 CTOT shall be included as part of the initial ATC clearance. In collaboration with the PIC, Aerodrome Control shall ensure that every opportunity and assistance is granted to a flight to meet CTOT and allocated CTO at Kabul FIR entry waypoint.

A.7 Coordination Procedure between Aircraft Operator / Pilot-in-Command, ANSPs, and Bangkok ATFMU to be applied within Bangkok FIR

A.7.1 Bangkok ATFMU (VTBBZDZX) shall be included in the list of AFTN addressees for NOTAMs regarding any planned activities that may affect slot availability (e.g. reservation of airspace / closure of airspace, non-availability of routes, etc).

A.7.2 Bangkok ATFMU (VTBBZDZX) shall be included in the list of AFTN addressees for ATS messages (e.g. FPL, DEP, DLA, CHG, CNL) relating to flights subject to ATFM procedures.

A.7.3 Prior to departure and before obtaining an ATC Clearance, in circumstances where it becomes obvious that the allocated Kabul FIR slot parameters will not be met, a new slot allocation should be obtained as soon as possible. To avoid frequency congestion, this should be obtained primarily via aircraft operators / flight dispatchers; otherwise Ground Control or Clearance Delivery may be asked for assistance in the coordination with Bangkok ATFMU as an alternative. Early advice that the allocated Kabul FIR slot parameters will be missed also enables the slots so vacated to be efficiently reassigned to other flights.

A.7.4 The PIC shall include the CTOT in the initial ATC clearance request.

A.7.5 A missed slot results in considerable increase in coordination workload for ATC and PIC and should be avoided. To minimize coordination workload in obtaining a revised slot allocation, if the flight is still at the gate and an ATC Clearance has been

obtained, PIC shall advice Ground Control of the missed slot and obtains new CTOT as specified in A.7.3. If it becomes essential, the ATC Clearance may be cancelled.

A.7.6 Prior to departure and after the aircraft has left the gate, in the event that the aircraft is unable to meet the allocated Kabul FIR slot parameters, when requested by the PIC, Aerodrome Control shall assist the PIC in coordination with Bangkok ACC and ATFMU for a revised slot allocation.

A.7.7 PIC shall adjust cruise flight to comply with slot parameters at the Kabul FIR entry waypoint, requesting appropriate ATC clearances including speed variations in accordance with published AIP requirements.

A.8 BOBCAT ATFM Operations for Departing Aircraft from Suvarnabhumi Airport (VTBS)

A.8.1 To increase the effectiveness for departing aircraft from VTBS during the BOBCAT ATFM period and to ensure priority departure in accordance with CTOT, the following procedures are required for all BOBCAT ATFM-related flights:

(a) Before obtaining an ATC Clearance, ensure the flight is ready at least 25 minutes prior to the allocated CTOT (the additional 5-minute buffer to CTOT should not be taken into account under this provision);

(b) Radio communication with Suvarnabhumi Ground Control shall be established within 5 minutes of enroute ATC clearance being received;

(c) Flights that do not adhere to the procedures mentioned in (a) and (b) will be considered not-ready and may result in the withdrawal of ATC Clearance as well as CTOT;

(d) Notwithstanding the above; there may be some occasions where, due to the location of the aircraft's parking bay, the aircraft could take less time to taxi than the Standard Taxi Time (STT) used by the BOBCAT system. In these cases, ATC may delay pushback and start-up procedures in order for the aircraft to have a smooth transition to the holding point.

A.9 Basic Computer Requirement

A.9.1 Aircraft Operators and ATS units involved are required to have computer equipment capable of connecting to the BOBCAT website https://www.bobcat.aero via the internet and satisfying the following minimum technical requirements:

(a) A personal computer of any operating system with the following characteristics:

- Processor: minimum CPU clock speed of 150 MHz
- Operating System: Any that operates one of the following web browsers - Windows 2000/XP, Linux, Unix or Mac OS
- Web Browser: Internet Explorer 5.5 or newer, Mozilla 1.0 or newer, Mozilla Firefox 1.0 or newer, Netscape 7 or newer
- RAM: 64 MB or large (depending on operating system)
- Hard Disk Space: minimum of 500 MB or larger (depending on operating system)
- Monitor Display Resolution: Minimum of 800x600 pixels
- Internet Connection: 56 Kbps Modem or faster

A.10 ATFM Users Handbook

A.10.1 Supporting documentation, including detailed information in respect of the BOBCAT ATFM operations described above and other pertinent information has been included in the Bay of Bengal and South Asia ATFM Handbook (the "ATFM Users Handbook"), available at https://www.bobcat.aero.

A.10.2 ANSPs and aircraft operators shall ensure that they are conversant with and able to apply the relevant procedures described in the ATFM Users Handbook

A.11 Contingency Procedures

A.11.1 In the event that an aircraft operator or ATS unit is unable to access the ATFMU website, Bangkok ATFMU shall be contacted via the alternative means (telephone, fax, AFTN) described in 2.12.

A.11.2 Contingency procedures for submission of slot request, including activation of Contingency Slot Request Templates (CSRT), are included in the ATFM Users Handbook.

A.11.3 In the event of BOBCAT system failure, Bangkok ATFMU shall notify all parties concerned and advise that BOBCAT ATFM slot allocation procedures are suspended. In this event, all parties concerned will revert to the existing ATM procedures as applicable outside the daily period of ATFM metering.

A.12 BOBCAT ATFM System Fault Reporting

A.12.1 An ATFM system fault is defined as a significant occurrence affecting an ATS unit, an aircraft operator or ATFMU resulting from the application of ATFM procedures.

A.12.2 Aircraft operators and ATS units involved in Bangkok FIR, experiencing an ATFM system fault should complete an ATFM System Fault Report Form from the ATFM Users Handbook (see Appendix B) and forward it to the ATFMU at the address indicated on the form. The ATFMU will analyze all reports, make recommendations/suggestions as appropriate and provide feedback to the parties concerned to enable remedial action.

A.13 Bangkok ATFMU Contact Information

A.13.1 Bangkok ATFMU is staffed 24 hours and may be contacted via the following:

- Unit Name: Bangkok ATFMU
- Telephone: +66 2287 8024, +66 2287 8025
- Fax: +66 2287 8027
- Tel / Fax: +66 2287 8026
- Mobile: +66 81 829 5256
- E-Mail: atfmu@bobcat.aero
- AFTN: VTBBZDZX

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