ENR 1.9 AIR TRAFFIC FLOW MANAGEMENT AND AIRSPACE MANAGEMENT

1.   AIR TRAFFIC FLOW MANAGEMENT (ATFM) SERVICE AND BANGKOK AIR TRAFFIC FLOW MANAGEMENT UNIT (BANGKOK ATFMU)

1.1   Introduction

1.1.1   This introduces an overview of air traffic flow management (ATFM) services within Bangkok FIR by Bangkok ATFM Unit. Content provided includes an introduction to ATFM service, triggering and dissemination of ATFM measures, exemption of flights, Ground Delay Program (GDP) procedure, and important contact information.

1.1.2   Note that content herein provides only a general description of ATFM services, and stakeholders (airspace users, airport operators) should consult associated NOTAM, AIC or ATFM Daily Plan for detailed information whenever an ATFM measure is triggered within the FIR.

1.2   Provision of ATFM Services

1.2.1   ATFM services are services provided to balance air traffic demand against ATM resource (airspace or airport) capacity. This is achieved through issuance of various ATFM measures as defined in ICAO Doc 9971 – Manual on Collaborative ATFM. These ATFM measures include Minutes-in-Trail, Miles-in-Trail, Minimum Departure Interval, Ground Delay Program through issuance of Calculated Take-Off Time (due to airspace or airport constraint), Fix Balancing, Speed / Altitude Control, and other applicable ATFM measures. Planning of ATFM service is conducted by the ATFM Unit, while the provision of the service – such as issuance of ATFM measure – may be provided by the ATFM Unit or the ATS Unit depending on the nature of the ATFM measure in place.

1.2.2   For Bangkok FIR, the ATFM services are provided by Aeronautical Radio of Thailand Ltd (AEROTHAI) from Bangkok Air Traffic Flow Management Unit (Bangkok ATFMU). The services provided comprise preparation and distribution of ATFM Daily Plan (ADP), planning and issuance of ATFM measures to balance demand and capacity in airspace sectors and airports, monitoring and post-operations analysis of ATFM measure compliance, and the provision of ATFM service for westbound flights transiting Kabul FIR between 2000 to 2359 UTC as specified in subsection 2 of this AIP section. Note that while ATFM measure(s) are in effect, both international and domestic flights may be subjected to such ATFM measure(s). As Bangkok ATFMU operates on a 24-hour basis, ATFM measure(s) may be initiated as and when necessary.

1.2.3   Bangkok ATFMU will exercise due diligence to ensure stakeholders - both local and international - are included or kept updated throughout the decision-making process relating to ATFM services.

1.3   Triggering of ATFM measures

1.3.1   An ATFM measure may be triggered when Bangkok ATFMU determines that there will be a demand-capacity imbalance situation at a particular ATM resource. The imbalance may be due to, inter alia, planned airspace or airport closure, special event affecting airport operations, and adverse weather.

1.3.2   Insofar as possible, Bangkok ATFMU will provide advance notification of an ATFM measure to be initiated and its effective period. In the case of pre-planned events, such as annual Children's Day air display or annual joint military air exercise, an AIP Supplement and / or NOTAM will be issued informing stakeholders of ATFM measure to be used. In the case of unplanned events, such as forecast adverse weather, an ATFM Daily Plan (ADP) and / or NOTAM will be issued to provide advance notification. The ADP will be issued via e-mail to stakeholders' key point of contact.

1.4   Flights Exempted from ATFM Services

1.4.1   The following flights are exempted from the ATFM procedures:

   a) Flights experiencing an emergency, including aircraft subjected to unlawful interference;
   b) Flights in search and rescue or fire-fighting missions;
   c) Urgent medical evacuation flights specifically declared by medical authorities where flight delays would put the life of the patients at risk;
   d) Flights with "Head of State" status; and
   e) Other flights as may be determined by the appropriate authority.

1.4.2   Airspace users uncertain whether their flights should be exempted should contact Bangkok ATFMU for clarification.

1.5   Procedure for Ground Delay Program (GDP) through issuance of Calculated Take-Off Time (CTOT)

One of the key ATFM measures used by Bangkok ATFMU to balance traffic demand against congested resource capacity is Ground Delay Program (GDP) through the issuance of Calculated Take-Off Time (CTOT). CTOTs are calculated based on expected arrival times of flights at the congested resource, adjusted to achieve suitable flow rate, and should provide airspace users with awareness of their departure times. When GDP is activated, all relevant stakeholders (ATS units, airspace users, airport operators, and ground handlers) are requested to adhere to the following procedure:

1.5.1   Flight Plan (FPL) for flights within any portion of the Bangkok FIR, inclusive of overflights and those departing from or landing at airports in Thailand, should be submitted not less than 3 hours prior to the Estimated Off-Block Time (EOBT) except where necessary for operational and technical reasons.

1.5.2   For the flights expected to be subjected to ATFM measures, Delay Message (DLA) should be transmitted when the departure of an aircraft, for which the basic flight plan data (FPL) has been sent, is delayed by more than 15 minutes after the Estimated Off-Block Time contained in the latest submitted basic flight plan data.

1.5.3   Prior to the activation of Ground Delay Program (GDP), an ATFM Daily Plan (ADP) will be distributed to all stakeholders via provided e-mail addresses. Should the address not be updated, stakeholders can contact Bangkok ATFMU to make necessary revision.

1.5.4   On the day of operations, when possible, Bangkok ATFMU will host a web conference to discuss the GDP operations. Following the briefing, the conference room will remain open as a Help Desk to provide assistance and facilitate CTOT management for stakeholders. The web conference address will be included in the ADP.

1.5.5   CTOTs will be distributed to stakeholders via e-mail and AFTN messages. They will also be published at http://atfm.aerothai.aero. No password is required for accessing the CTOT distribution page.

1.5.6   For flights with CTOTs, crews shall plan their flights to be ready for push-back at an appropriate timing such that Take-Off Time (TOT) will be in compliance with CTOT.

1.5.7   For flights with CTOTs and departing from aerodromes within Bangkok FIR, follow additional push-back and start-up clearance delivery requirements as follows:

   a) Flights departing from VTBS and VTBD: crews shall contact ATC for push-back and start-up clearance at least 20 minutes prior to CTOTs.
   b) Flights departing from other aerodromes: crews shall contact ATC for push-back and start-up clearance at least 15 minutes prior to CTOTs.
   c) ATC shall provide best assistance to ensure flights complying with the above timeframe can takeoff within CTOT compliance window. Failure to comply with the above timeframe may result in further gate holding, and ATC may request crews to obtain new CTOT from Bangkok ATFMU (through their flight operations / dispatch).

1.5.8   Flights with CTOTs operating out of an A-CDM airport, where CTOT is integrated into the A-CDM process, are advised to comply with the local A-CDM procedure.

1.5.9   CTOT compliance windows are provided for ATC at the departure airport to accord operational flexibility in handling airport traffic conditions. CTOT compliance windows are defined as:

   a) -5/+10 minutes for CTOTs assigned in response to constrained arrival airports;
   b) -5/+5 minutes for CTOTs assigned in response to constrained airspace volumes.

   Insofar as practicable, ATC shall manage flights to depart as close to the CTOT as possible.

1.5.10   Should there be any change to flight's operating time (CHG, DLA), airspace user shall contact Bangkok ATFMU as soon as possible to obtain a new CTOT prior to ATC Clearance request to avoid excessive delay. As a general rule, airspace users are responsible for new CTOT requests with Bangkok ATFMU while their aircraft are still at the parking bays (before off-block); once the aircraft has been cleared for pushback, ATC shall assist in obtaining new CTOT if needed due to ground movement issues.

1.5.11   For flights originally operating outside of the GDP period but delaying into it, airspace users shall contact Bangkok ATFMU to obtain CTOT as soon as possible and prior to clearance delivery. If uncertain whether the flight should be subjected to GDP, contact Bangkok ATFMU to verify.

1.6   Bangkok ATFMU Users Manual

Bangkok ATFMU Users Manual provides details information and procedure regarding ATFM operations. The updated manual can be downloaded at http://atfm.aerothai.aero.

1.7   Bangkok Air Traffic Flow Management Unit

1.7.1   Bangkok ATFMU is staffed 24 hours and may be contacted via the following:

Unit Name:	Bangkok ATFMU
Tel:	+66 2287 8024
	+66 2287 8025
Fax:	+66 2287 8026
Mob:	+668 1829 5256
AFS:	VTBBZDZX
E-mail:	atfmu@bobcat.aero
Website:	http://atfm.aerothai.aero

2. **AIR TRAFFIC FLOW MANAGEMENT PROCEDURES OVER BAY OF BENGAL, SOUTH ASIA AND PAKISTAN THROUGH KABUL FIR**

2.1 **Introduction**

2.1.1 The States of the ICAO Asia/Pacific Region within the Bay of Bengal, South Asia and Pakistan airspace implemented an operational trial of an automated Air Traffic Flow Management (ATFM) service under the auspices of the ICAO APANPIRG. Pursuant to comprehensive reviews of the operational trial performance, the BOBCAT ATFM procedure has since been permanently implemented starting 5 July 2007.

2.1.2 Following the reviews of operations, and the publication of ICAO Asia-Pacific Regional Framework for Collaborative ATFM; States in the region has agreed, as per the outcome of the 27th meeting of Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/27), to amend the terminologies and phraseologies used in this BOBCAT ATFM operations to better align with global standards set forth by the regional framework as well as ICAO Doc 9971 – Manual on Collaborative ATFM. The amended procedures and terminologies are contained herein.

2.2 **Provision of ATFM services for flights transiting Kabul FIR (BOBCAT ATFM)**

2.2.1 As one of the ATFM services provided, Bangkok ATFMU provides ATFM service for westbound 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.

2.2.2 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.

2.2.3 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 airspace users and ANSPs in the FIRs concerned.

2.2.4 This section describes in greater detail the procedures involved in the BOBCAT ATFM service.
The objectives of this service are to:

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

2.3 **BOBCAT ATFM-affected ATS routes, flight levels, and applicable period**

2.3.1 All westbound flights intending to enter the Kabul FIR between 2000 UTC and 2359 UTC daily on ATS routes and Flight Level in Table 1 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 above mentioned.

Table 1: ATS Route and Flight Levels Requiring ATFM Slot Allocation

Routing through the Kabul FIR	Metering Waypoint(s)	Flight Levels
L509 - M875 P764	LAJAK	FL280, FL300, FL320, FL340, FL360, FL380, FL400
M875	SITAX	FL280, FL300, FL320, FL340, FL360, FL380, FL400
N644	DOBAT	FL280, FL300, FL320, FL340, FL360, FL380, FL400
L750	BIROS	FL280, FL300, FL320, FL340, FL360, FL380, FL400
P628 - N636	ASLUM	FL300, FL320, FL340, FL360, FL380, FL400
N636	SERKA	FL280, FL300, FL320, FL340, FL360, FL380, FL400

2.3.2 Flights that plan to enter Kabul FIR without an ATFM slot allocation – CTOT, CTO at Kabul FIR entry fix, 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.

2.3.3 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.

2.4   Flights exempted from BOBCAT ATFM

2.4.1   The following flights are exempted from BOBCAT ATFM procedures:

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

Note: After medical flights have completed their mission; they should be subject to ATFM measures. Scheduled passenger transfer flights are, by nature, non-urgent and should not be given priority under normal operational situation.

2.4.2   Airspace users uncertain whether their flights should be exempted should contact Bangkok ATFMU for clarification.

2.5   Mandatory CTOT and KABUL FIR slot allocation

2.5.1   Affected flights shall obtain the mandatory Kabul FIR slot allocation – CTOT, CTO at Kabul FIR entry fix, 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 fix points in the vicinity of the eastern boundary of the Kabul FIR.

2.5.2   The application, calculation, and distribution of CTOT and associated Kabul FIR entry fix slot allocations will be managed via internet access to the BOBCAT system in accordance with the BOBCAT ATFM operating procedure in section 2.6.

2.6   BOBCAT ATFM operating procedures

2.6.1   All affected flights are required to submit slot requests to the BOBCAT system by logging into https://www.bobcat.aero between 0001 and 1159 UTC on the day of flight and completing the electronic templates provided.

2.6.2   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.

2.6.3   Slot Allocation Process

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) Slot Request Submission

– Slot requests including preferred ATS route, flight level and Maximum Acceptable Delay (MAD) should be lodged between 0001 UTC and 1159 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 MADS.
– Slot requests shall be for flight parameters that are able to be met by the flight. For example, flights requesting a slot at FL380 must be able to transit Kabul FIR at FL380. Flight subsequently unable to meet slot parameters (flight level, ATS route, or CTO at entry fix) should expect non-preferred routes and/or flight levels, enroute holding and/or diversion around Kabul FIR.
– 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.
– 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.

b) Slot Allocation and Distribution

– 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 BOBCAT ATFM website. Alternative arrangements for notification of slot distribution (e.g. Fax, Telephone, and e-mail) should be coordinated with the Bangkok ATFMU.
– After the slot allocation has been published at https://www.bobcat.aero, airspace users can:

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

c) ATS Units involved within Bangkok FIR (e.g. Bangkok 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.

2.6.4   Submission of ATS Flight Plan

   a)   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.
   b)   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.

2.7   Aircraft operator / pilot-in-command and ANSP responsibilities

Aircraft Operator / Pilot-in-Command

2.7.1   In accordance with ICAO PANS ATM provisions, it is the responsibility of the Pilot-in-Command (PIC) and the airspace user 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 fix, and flight parameters (route, flight level) allocated by BOBCAT.

2.7.2   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 fix.

Air Navigation Service Providers (ANSPs)

2.7.3   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.

2.7.4   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 fix.

2.7.5   AIS Centres (VTBD/VTBS), Aerodrome Aeronautical Information Services Units (VTCC/VTSS/VTSP) or Base Operations (Military) shall forward the flight plan information to the ATFMU at AFTN address VTBBZDZX

2.8   Coordination procedure between aircraft operator / pilot in command, ANSPS, and Bangkok ATFMU to be applied within the Bangkok FIR

2.8.1   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).

2.8.2   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.

2.8.3   Prior to departure and before obtaining an Airway 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.

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

2.8.5   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 Airway Clearance has been obtained, PIC shall advice Ground Control of the missed slot and obtains new CTOT as specified in 2.8.3. If it becomes essential, the ATC Clearance may be cancelled.

2.8.6   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.

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

2.9   BOBCAT ATFM operations for departing aircraft from Bangkok/Suvarnabhumi International (VTBS)

2.9.1   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 Airway 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)   Contact ATC for push-back and start-up clearance at least 20 minutes prior to CTOTs unless instructed otherwise per local A-CDM procedure;
   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 Airway 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.

2.10   Basic Computer Requirement

2.10.1   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
    b) Processor: minimum CPU clock speed of 150 MHz
    c) Operating System: Any that operates one of the following web browsers – Windows 2000/XP, Linux, Unix or Mac OS
    d) Web Browser: Internet Explorer 5.5 or newer, Mozilla 1.0 or newer, Mozilla Firefox 1.0 or newer, Netscape 7 or newer
    e) RAM: 64 MB or large (depending on operating system)
    f) Hard Disk Space: minimum of 500 MB or larger (depending on operating system)
    g) Monitor Display Resolution: Minimum of 800x600 pixels
    h) Internet Connection: 56 Kbps Modem or faster

2.11   ATFM Users Handbook

2.11.1   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.

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

2.12   Contingency Procedures

2.12.1   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 2.14.

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

2.12.3   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.

2.13   BOBCAT ATFM System Fault Reporting

2.13.1   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.

2.13.2   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 analyse all reports, make recommendations/suggestions as appropriate and provide feedback to the parties concerned to enable remedial action.

2.14   Bangkok ATFMU Contact Information

Bangkok ATFMU may be contacted via the following:
Unit Name: Bangkok ATFMU
Tel: +662 287 8024, +662 287 8025, +662 287 8026
Fax: +662 287 8027, +662 287 8026
Mob: +668 1829 5256
E-mail: atfmu@bobcat.aero
AFS: VTBBZDZX

Appendix A

BOBCAT USERNAME / CONTACT INFORMATION MODIFICATION FORM
To be submitted to Bangkok ATFMU

SECTION I: ADD NEW USERS

Prefix	First Name	Last Name	Proposed Username Up to 20 characters	E-mail Address

SECTION II: REMOVE USERS

Prefix	First Name	Last Name	Username	E-mail Address

SECTION III: RESET PASSWORD

Prefix	First Name	Last Name	Username

SECTION IV: NOTIFICATION E-MAIL ADDRESS

☐ Change our organization's notification e-mail address to_____

SECTION V: CONTACT INFORMATION

Organization: _____

Full Name: _____

Tel: _____

E-mail: _____

Signature: _____

Date/Time of Request: _____

Appendix B

ATFM SYSTEM FAULT AND EVENT REPORT FORM
To be submitted to Bangkok ATFMU

SECTION I: GENERAL INFORMATION

1. Date and time (UTC) of Occurrence _____ / _____ / _____ / _____ / _____
                                               yy / mm / dd / hh / mm

2. Type of Event

   2.1 Failure of BOBCAT system

   2.2 Communication Link failure

   2.3 Non compliance with ATFM procedures by Pilot / Airline Operator / ANSP

   2.4 Error in FPL and associated messages

   2.5 Failure in ATFM Slot Monitoring (i.e. TWR at Aerodrome of Departure)

   2.6 Non compliance with slot allocation window

3. Restrictions applicable to the flight: _____

SECTION II: DETAILED INFORMATION

1. Flight Data (if applicable) – Call Sign: _____

   Attach copies of Flight Progress Strips indicating DEP, EOBT, WUT, DES or Entry Point & ETO over entry point, FL to ATC Unit/sector area of activity as applicable.

2. Other details necessary for analysis of the incident

   Attach copies of FPL or RPL, subsequent ATS modifying messages etc. If appropriate

SECTION III: SUPPLEMENTARY INFORMATION

1. Actions already initiated: _____
   _____

2. Contact information follow-up action:
   2.1 Name : _____
   2.2 Designation: _____
   2.3 Tel: _____
   2.4 E-mail: _____

3. Signature: _____

4. Date/Time of Report: _____

3.   Re-routing Scenarios

3.1   Re-routing of westbound flight on L759 to M770 for night time traffic from Southeast Asia to Europe

3.1.1   ATFM procedure over Bay of Bengal, South Asia and Pakistan through Kabul FIR (Afghanistan) using the BOBCAT system outlined in section 3 mainly addresses Demand-Capacity Balance for westbound flights entering the Kabul FIR.

3.1.2   It is recognized that there may be congestion / aircraft bunching prior to entering the Bay of Bengal on ATS Route L759 as westbound flight towards European destinations would be limited to FL280 - FL340, while available flight levels in Kabul FIR includes all westbound flights from FL280 to FL400.

3.1.3   Accordingly, flights planned on route L759 between PUT-BBS (Chennai FIR) maybe re-routed onto M770 via "PUT L515 OBMOG M770 BUBKO N895 BBS L759" under following conditions:

  a) If longitudinal separation cannot be achieved or maintained in relation to preceding traffic on the flight planned route L759 between PUT – BBS over the Bay of Bengal;
  b) When, by using the flight planned route L759, an aircraft would suffer an unacceptable lower flight level; and
  c) In concurrence with the flight crew, the Bangkok ACC shall assign alternative parallel route M770 or lower acceptable level on L759 to affected flights enabling a better chance of obtaining the ATFM slot allocation in the Kabul FIR.

3.1.4   Flight crews and dispatchers are encouraged to become fully conversant with the L759 re-routing scenario and are advised to take appropriate proceedings to enable affected flights to proceed via M770 when necessary.

4.   Air Traffic Management

4.1   Air Traffic Management for flight operating on ATS routes A202, W21 / R474, B346 and R215

4.1.1   Flight planning for traffic transiting from Bangkok FIR into Vientiane FIR should be as follows:

  a) Flight intends to operate on ATS route B218 within Vientiane FIR should flight plan via B346 or R215
  b) Flight intends to operate on ATS route R474 between 0100-1000 UTC on Monday-Friday should flight plan via W21 CMP R474 vice versa
  c) R474 is available as follows:
      i.   Monday-Friday between 1001-0059 UTC
      ii. H24 for Saturday, Sunday and Public holiday

4.1.2   Flight level assignment will be as follows:

  a) B346
      i.   All odd flight level (RVSM table)
      ii. Pre-Departure Coordination (PDC): FL270, FL330
  b) R215: NO-PDC FL290
  c) R474 and W21 CMP R474 northbound:
      i.   All odd flight level (RVSM table)
      ii. Pre-Departure Coordination (PDC): FL270, FL330
  d) A202 northbound: NO-PDC FL290, FL330, FL370, FL390, FL410, FL450

5.   No-Pre-Departure Coordination Procedures (NO-PDC)

5.1   Flight Level Allocation.

NO-PDC arrangement applies to flight operating on RNAV/ATS routes outbound from Bangkok FIR will be cleared to specific levels as indicated below:

ATS route designator	NO-PDC Flight Level
A202	FL290 or above
L880 / L628	FL330, FL370, FL410
N506 / R468 / M768	FL270, FL330, FL410
N891	FL330

Remarks:
  1. Departing aircraft will be cleared to the flight levels appropriate to the route.
  2. 10 minutes longitudinal separation will be applied, with MNT, to succeeding aircraft on the same route and at same flight level such longitudinal separation will be adjusted for faster or slower preceding aircraft as appropriate.
  3. Levels indicated above are intended to facilitate initial departure only, level allocation once airborne is still subject to normal ATC requirements.

5.2 **Procedure for Bay of Bengal ATS route network.**

NO-PDC arrangement will be applied for flight operating on the following ATS routes;

ATS route designator	NO-PDC Flight Level
P646, L507	All westbound level available
P762, L301, P646 / N895, M502	FL260, FL320
L759, L515 / M770, P628	FL280, FL300, FL340, FL380, FL400
L645	FL320, FL360
P627	FL320

Remarks:

1. Flight level mentioned above are intended to facilitate traffic flow during departure phase only.
2. Availability of flight level shall subject to traffic situation.
3. FL360 and above is available base on coordination.

6. **Airspace Management and Airspace Management Cell (Thailand) (AMC)**

6.1 **Introduction**

Airspace Management Cell (AMC), a joint civil/military operation has been established in Thailand for responsible for day-to-day management of airspace according to Flexible Use of Airspace (FUA) concept. In accordance to DOC 10088 Manual on Civil-Military Cooperation in Air Traffic Management, the basic for the FUA concept is that airspace should no longer be designated as military or civil airspace but should be considered as one continuum and used flexibly on a day-to-day basis. Any necessary airspace segregation is temporary, based on real-time usage within a specific time period. The objectives of AMC are:

a) To enhance civil and military airspace coordination procedure for the application of Flexible Use of Airspace (FUA) level 2 (pre-tactical level) and level 3 (tactical level).
b) To coordinate military training areas and also civil activities areas in order to maximize shared use of airspace through civil/ military coordination.
c) To manage and promulgate the daily allocation of flexible use of airspace structures.
d) To increase the capacity, efficiency and safety of airspace use.
e) To provide Airspace Use Plan (AUP) information and effective coordination with airline operators, Air Traffic Services, Air Traffic Flow Management and other concerned units.

6.2 **The Flexible Use of Airspace (FUA) Concept**

6.2.1 The FUA concept has been developed at the three levels of Airspace Management that correspond to phase and levels of Civil and Military cooperation and coordination.

Level 1: Strategic
Long-term, high-level planning and support to achieve the goals of civil/military collaboration and cooperation, including the development of a national airspace policy providing a framework for airspace management and utilization, and the development of harmonized procedures and mechanisms to be applied during pre-tactical and tactical phases.

Level 2: Pre-tactical
An intermediate preparatory planning phase or timeframe whereby the decisions and objectives made during the strategic phase, as well as the procedures agreed during that timeframe are implemented, leveraging cooperation and collaborative decision making in order to meet the efficiency and safety objectives of the tactical phase.

Level 3: Tactical
The coordination mechanisms and exchanges between civil and military stakeholders, in real-time or within the immediate timeframe of the commencement of activities. It is the execution of actions for a narrow immediate objective.

6.2.2 Conditional Routes

Conditional Routes (CDRs) are designed to supplement the permanent ATS-route network and to allow flights to be planned on ATS routes, or portions thereof, that are not always available. The following types of CDRs are available in Thailand:

– CDR1 will be plannable in the same way as permanent ATS routes for time periods published in the AIP.
– CDR2 routes are non-permanently plannable CDRs whose availability are coordinated between AEROTHAI and military units and disseminated to aircraft operators for flight planning purposes. Flights on a CDR2 can only be flight planned when the CDR is made available.
– CDR3 routes are not available for flight planning; however, ATC Units may issue tactical clearances on such route segments. Aircraft operators are invited to refer to AIP Part ENR 3 ATS routes for additional information regarding latest CDRs published in Thailand. The availability condition of the CDRs will be detailed in the Remarks section.

6.2.3   Temporary Airspace Restriction and Reservation

The Temporary Airspace Allocation (TAA) process consists in the allocation process of airspace of defined dimensions assigned for the temporary reservation/segregation (TRA/TSA) or danger/restricted area (D/R) and identified more generally as a "manageable" area. Two different types of airspace reservation can be established taking into consideration the activity that would take place associated with the transit possibility:

1. Temporary Reserved Area (TRA): An airspace temporarily reserved and allocated for the specific use of a particular user for a determined period of time and through which other traffic may be allowed to transit under ATC clearance.
2. Temporary Segregated Area (TSA): An airspace temporarily segregated and allocated for the exclusive use of a particular user during
a determined period of time and through which other traffic will not be allowed to transit.

AMC Manageable Areas are areas including Prohibited, Restricted and Danger areas, subject to management and allocation by AMC at ASM Level 2.

6.3   Airspace Request and Planning Procedures

Airspace users, civil or military, who wish to reserve airspace for use and issue NOTAMs of airspace warning should contact and submit requests to AMC in advance.

6.3.1   For military exercise areas that are published in AIP Thailand manageable by AMC, the daily plan for airspace use shall be submitted to AMC before 0930 UTC or if necessary, by 1430 UTC at the latest, 1 day in advance primarily through AMC website http://www.thaicmac.aerothai.aero.

Any airspace requests or changes submitted to AMC after 1430 UTC via the website shall be processed during the operating hours next day.

Outside of AMC operating hours, urgent inquiries including airspace requests should be made to responsible ATC units, using contact channels listed in section 6.

6.3.2   For areas temporarily reserved (areas not published in AIP Thailand) for both civil or military uses, requests should be submitted to AMC 7 days in advance primarily through AMC website.

6.4   Airspace Use Plan (AUP), Updated Airspace Use Plan (UUP)

6.4.1   Daily plan of airspace use, availability of CDRs and other related information will be summarized and published in daily Airspace Use Plan (AUP) available on the AMC (Thailand) website. http://www.thaicmac.aerothai.aero/app/index.html#/aup. Changes to AUP will be notified via Updated Airspace Use Plan (UUP). Only airspace warnings will be notified by NOTAM Series J.

6.4.2   AUP/UUP will cover 24-hour time period between 1700 UTC to 1659 UTC of next day or 0000 LT to 2359 LT in Thailand. AUP will be published at 1000 UTC the day before AUP is in effect while UUP will be published from 1000 UTC onward during operating hours of AMC.

6.4.3   The contents of AUP/UUP in AMC website available to public are as follows;

a) AUP-A: The list of available CDRs category 2 and Military areas availability
b) AUP-B: The list of closed permanent ATS route and CDRs category 1
c) AUP-C: The list of TSAs and TRAs and AMC manageable P, D and R areas
d) AUP-D: The list of changed airspace restrictions
e) AUP-E: The list of reduced coordination airspace
f) AUP-F: The list of additional information and Series J-NOTAM (warning NOTAM)

6.4.4   Short-notice requests are airspace requests that are not submitted in advance and have activities planned for the same day (Local Time) as when requests are made.

a) For requests submitted less than 3 hours before the start of the activities, airspace users should contact ATS unit directly for approval. Warning NOTAMs will not be issued for activities with duration shorter than 2 hours.
b) For requests submitted to AMC 3 or more hours in advance, NOTAMs will be issued as appropriate and UUP will updated accordingly in 3-hour interval starting from 0030 UTC.

6.5   Flight Planning for CDR

6.5.1   Through coordination on airspace use between concerning civil and military units, availability of CDR2 will be notified via AUP/UUP with detailed in previous sections. The airline operators or flight dispatchers should look for CDR2 route availability and file flight plan accordingly. Flights on CDR2 can only be flight planned when the CDRs are made available.

6.5.2   Any foreseen period of non-availability of CDR1 will, whenever practicable, be notified to the operators by NOTAMs and summarized in AUP/UUP.

6.5.3   In the event of tactical changes and short-notice unavailability of a CDR2, flights will be instructed by ATC to use alternative routes. Final use of airspace is subject to real-time civil/military coordination through ATC clearance.

6.6   AMC (Thailand) Hours of Operation

6.6.1   Coordination and planning of airspace use are conducted daily between 2330 - 1430 UTC.

6.6.2   Outside operation hours, urgent use of airspace should be coordinated directly with responsible Air Traffic Control units or Military control agencies stated below or other responsible units defined in the AIP Thailand.

Contact channel for ATC units and Military control agencies

Units	Phone	Position
Bangkok Area Control Centre (North)	+662 085 9112, +662 307 2329	A/FIR Manager
Bangkok Area Control Centre (South)	+662 285 9111, +662 307 2391	A/FIR Manager
OSCAR Control	+662 534 6000 Ext 24731	Military Control Agency
FOCAL Control	+662 534 6662, +662 532 4142	Military Control Agency
BIG SHELL Control	+662 534 6000 Ext 62507, 2663 or +667 726 8083	Military Control Agency

6.7   Contact Information

Airspace Management Cell (Thailand)
Aeronautical Radio of Thailand Ltd.
102 Ngamduplee Tungmahamek, Sathon, Bangkok 10120, Thailand

AMC website for submitting airspace request and for AUP/UUP Information: http://www.thaicmac.aerothai.aero

Telephone: +662 307 2040, 2041, 2042, or 2045
Mobile phone: +666 1402 4966
Fax: +662 307 2139 or +662 307 2140
E-mail: thaicmac15@aerothai.co.th
AFTN: VTBBZDZX