

ENR 1.9 AIR TRAFFIC FLOW MANAGEMENT (ATFM)**1. RVSM POLICY AND PROCEDURES IN THE BANGKOK FIR****1.1. Airworthiness and Operational Approval and Monitoring**

- 1.1.1 APPROVAL PROCESS. Operators must obtain airworthiness and operational approval from the State of Registry or State of the Operator, as appropriate, to conduct RVSM operations. On behalf of the Pacific ATS providers, the FAA is maintaining a website containing documents and policy for RVSM approval. The Internet address is : <http://www.faa.gov/ats/ato/rvsm1.htm>. in the "RVSM Documentation" section, under "Documents Applicable to All RVSM Approvals", the "Aircraft/Operator Approval Events Outlines" for US and Non-US Operators provides an outline of approval process tasks with references to related documents.
- 1.1.2 AIRCRAFT MONITORING. (Source Document: IG 91-RVSM/TGL #6, Asia/Pacific Minimum Monitoring Requirements) Operators are required to participate in the RVSM aircraft monitoring program. This is an essential element of the RVSM implementation program in that it confirms that the aircraft altitude-keeping performance standard is being met.
- 1.2.1 Monitoring accomplished for other regions can be used to fulfill the monitoring requirements for the Asia/Pacific region. There are numbers of organizations worldwide who may be able to perform monitoring services in the Asia/Pacific region. Operators should contact the Monitoring Agency for Asia Region (MAAR) for confirmation that a monitoring contractor is acceptable for the submission of monitoring data.
- 1.2.2 An additional source that provides information on the monitoring requirements and monitoring services is the Monitoring Agency for Asia Region (MAAR) website and the information can be accessed by:
- Accessing the "Monitoring Program" section of the MAAR website.
 - The Internet address for MAAR is: <http://www.aerothai.co.th/maar>

1.2. In-flight Procedures within RVSM Airspace

- 1.2.1 Before entering RVSM airspace, the pilot should review the status of required equipment (see Appendix 4 of FAA IG 91-RVSM for pilot RVSM procedures). The following equipment should be operating normally:
- two primary altimetry systems;
 - one automatic altitude-keeping device; and
 - one altitude-alerting device;
 - one altitude operating transponder (if required for operation in that specific RVSM airspace)*
- 1.2.2 See Appendix A of this Policy and Procedures or Appendix 5 of FAA IG 91-RVSM for pilot and controller actions in contingencies. The pilot must notify ATC whenever the aircraft:
- is no longer RVSM compliant due to equipment failure; or
 - experiences loss of redundancy of altimetry systems; or
 - encounters turbulence that affects the capability to maintain flight level.
- 1.2.3 TRANSITION BETWEEN FL's. (Source Document: 91-RVSM/TGL #6) During cleared transition between levels, the aircraft should not overshoot or undershoot the assigned FL by more than 150 ft (45m).
- 1.2.4 PILOT LEVEL CALL. *Except when instructed by ATC*, pilots shall report reaching any altitude assigned within RVSM airspace in the Bangkok FIR.
- 1.2.5 CONTINGENCY PROCEDURES. The weather deviation procedures in 1.3 may be applied in the Bangkok FIR.

1.3. Weather Deviation Procedures**General procedures**

- 1.3.1 The following procedures are intended to provide guidance. All possible circumstances cannot be covered. The pilot's judgment shall ultimately determine the sequence of actions taken and ATC shall render all possible assistance.
- 1.3.2 If the aircraft is required to deviate from track to avoid weather and prior clearance cannot be obtained, an air traffic control clearance shall be obtained at the earliest possible time. In the meantime, the aircraft shall follow the procedures detailed in 1.3.9 below.

- 1.3.3 The pilot shall advise ATC when weather deviation is no longer required, or when a weather deviation has been completed and the aircraft has returned to the centerline of its cleared route.
- 1.3.4 When the pilot initiates communications with ATC, rapid response may be obtained by stating "WEATHER DEVIATION REQUIRED" to indicate that priority is desired on the frequency and for ATC response.
- 1.3.5 The pilot still retains the option of initiating the communications using the urgency call "PAN PAN" to alert all listening parties to a special handling condition, which may receive ATC priority for issuance of a clearance or assistance.
- 1.3.6 When controller-pilot communications are established, the pilot shall notify ATC and request clearance to deviate from track, advising, when possible, the extent of the deviation expected. ATC will take one of the following actions:
- a) if there is no conflict traffic in the horizontal dimension, ATC will issue clearance to deviate from track; or
 - b) if there is conflict traffic in the horizontal dimension, ATC will separate aircraft by establishing vertical separation or, if unable to establish vertical separation, ATC shall:
 - i) advise the pilot unable to issue clearance for requested deviation
 - ii) advise pilot of conflicting traffic
 - iii) request pilot's intentions
- SAMPLE PHRASEOLOGY:**
"Unable (requested deviation), traffic is (call sign, position, altitude, direction), advise intentions."
- 1.3.7 The pilot will take the following actions:
- a) Advise ATC of intentions by the most expeditious means available.
 - b) Comply with air traffic control clearance issued or...
 - c) Execute the procedures detailed in 1.3.9 below. (ATC will issue essential traffic information to all affected aircraft).
 - d) If necessary, establish voice communications with ATC to expedite dialogue on the situation

Actions to be taken if a revised air traffic control clearance cannot be obtained

- 1.3.8 The pilot shall take the actions listed below under the provision that the pilot may deviate from rules of the air (e.g., the requirement to operate on route or track center line unless otherwise directed by ATC), when it is absolutely necessary in the interests of safety to do so.
- 1.3.9 **If a revised air traffic control clearance cannot be obtained** and deviation from track is required to avoid weather, the pilot shall take the following actions:
- a) If possible, deviate away from an organized track or route system;
 - b) Establish communication with and alert nearby aircraft by broadcasting, at suitable intervals: flight identification, flight level, aircraft position (including the ATS route designator or the track code) and intentions (including the magnitude of the deviation expected) on the frequency in use, as well as on frequency 121.5 MHz (or, as a back-up, the VHF inter-pilot air-to-air frequency 123.45 MHz).
 - c) Watch for conflict traffic both visually and by reference to ACAS;
Note: 1.3.9 b) and c) above calls for the pilot to: broadcast aircraft position and pilot's intentions, identify conflict traffic and communicate air-to-air with near-by aircraft. If the pilot determines that there is another aircraft at or near the same FL with which his aircraft might conflict, then the pilot is expected to adjust the path of the aircraft, as necessary, to avoid conflict.
 - d) Turn on **all** aircraft exterior lights (commensurate with appropriate operating limitations);
 - e) For deviations of less than 10 NM, aircraft should remain at the level assigned by ATC;
 - f) **For deviations of greater than 10 NM**, when the aircraft is approximately 10 NM from track, initiate a level change based on the following criteria:

Route center line track	Deviations > 10 NM	Level change
EAST 000-179 magnetic	LEFT RIGHT	DESCEND 300 ft CLIMB 300 ft
WEST 180-359 magnetic	LEFT RIGHT	CLIMB 300 ft DESCEND 300 ft

- g) If contact was not established prior to deviating, continue to attempt to contact ATC to obtain a clearance. If contact was established, continue to keep ATC advised of intentions and obtain essential traffic information.
- h) When returning to track, be at its assigned flight level, when the aircraft is within approximately 10 NM of center line.

1.4. Flight planning Requirements

- 1.4.1 Unless special arrangement is made as detailed below, RVSM approval is required for operators and aircraft to operate within designated RVSM airspace. The operator must determine that the appropriate State authority has granted them RVSM operational approval and they will meet the RVSM requirements for the filed route of flight and any planned alternate routes. The letter “W” shall be inserted in item 10 (Equipment) of the ICAO standard flight plan to indicate that both the aircraft and operator are RVSM approved.
- 1.4.2 All operators filing Repetitive Flight Plans (RPLs) shall include the letter “W” in Item Q of the RPL to indicate RVSM approval status and include all equipment and capability in conformity with Item 10 of the ICAO Flight Plan.

1.5. Procedures for Operation of Non-RVSM Compliant Aircraft in RVSM airspace

- 1.5.1 FLIGHT PRIORITY. It should be noted that RVSM approved aircraft will be given priority for level allocation over non-RVSM approved aircraft.
- 1.5.2 VERTICAL SEPARATION APPLIED. The vertical separation minimum between non-RVSM aircraft operating in the RVSM stratum and all other aircraft is 2,000 ft.
- 1.5.3 PHRASEOLOGY. Non-RVSM compliant aircraft operating in RVSM airspace should use the phraseology contained in Appendix B.
- 1.5.4 CONTINUOUS CLIMB/DESCENT OF NON-COMPLIANT AIRCRAFT THROUGH RVSM AIRSPACE. Non-RVSM compliant aircraft may be cleared to climb to and operate above FL410 or descend to and operate below FL290 provided that they:
- Do not climb or descend at less than the normal rate for the aircraft and
 - Do not level off at an intermediate level while passing through the RVSM stratum.
- 1.5.5 SPECIAL COORDINATION PROCEDURES FOR CRUISE OPERATION OF NON-RVSM COMPLIANT AIRCRAFT IN RVSM AIRSPACE. Non-RVSM compliant aircraft may not flight plan between FL290 and FL410 inclusive within RVSM airspace, except for the following situations:
- The aircraft is being initially delivered to the State of Registry or Operator (see 1.6 for additional details and information); or
 - The aircraft was RVSM approved but has experienced an equipment failure and is being flown to a maintenance facility for repair in order to meet RVSM requirements and/or obtain approval; or
 - The aircraft is transporting a spare engine mounted under the wing; or
 - The aircraft is being utilized for mercy or humanitarian purposes; or
 - State aircraft (those aircraft used in military, custom and police services shall be deemed state aircraft)

Note: The procedures are intended exclusively for the purposes indicated and not as a means to circumvent the normal RVSM approval process.

- 5.5.1 The assignment of cruising levels to non-RVSM compliant aircraft listed in paragraph 1.5.5 a) to e) shall be subject to an ATC clearance. Aircraft operators shall include the “**STS/ Category of operations (i.e. FERRY/HUMANITARIAN/MILITARY/CUSTOMS/POLICE)/NON-RVSM COMPLIANT**” in Filed 18 of the ICAO Flight Plan.
- 5.5.2 Where necessary, the Air Traffic Control Centre may be contacted as follows:

Bangkok Area Control Centre

Telephone: +662 285 9111
AFTN: VTBBZRZX
FAX: +662 285 9077

1.6. Delivery Flight for Aircraft that are RVSM Compliant on Delivery

- 1.6.1 An aircraft that is RVSM compliant on delivery may operate in RVSM airspace provided that the crew is trained on RVSM policies and procedures applicable in the airspace and the responsible State issues the operator a letter of authorization approving the operation. State notification to the MAAR should be in the form of a letter, e-mail or fax documenting the one-time flight. The planned date of the flight, flight identification, registration number and aircraft type/series should be included.

E-mail address: safety@motc.go.th.
Fax number: +662 286 2913.
AFTN address: VTBAYAYX

1.7. Procedures for Suspension of RVSM

- 1.7.1 Air traffic services will consider suspending RVSM procedures within affected areas of the Bangkok FIR when there are pilot reports of greater than moderate turbulence. Within areas where RVSM procedures are suspended, the vertical separation minimum between all aircraft will be 2,000 ft

1.8. Guidance for Pilots and Controllers for Actions in the Event of Aircraft System Malfunction or Turbulence Greater than Moderate

- 1.8.1 See Appendix A for guidance in these circumstances.

1.9. Procedures for Air-Ground Communication Failure

- 1.9.1 The air-ground communication failure procedures specified in ICAO PANS-ATM Doc 4444 or when so prescribe in Regional Supplementary Procedures – Doc 7030/4 MID/ASIA/RAC, should be applied accordingly within Bangkok FIR.
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Appendix A

CONTINGENCY SCENARIOS

The following paragraphs summarize pilot actions to mitigate the potential for conflict with other aircraft in certain contingency situations. They should be reviewed in conjunction with the expanded contingency scenarios detailed on Appendix B, which contain additional technical and operational detail.

***Scenario 1: The pilot is: 1) unsure of the vertical position of the aircraft due to the loss or degradation of all primary altimetry systems, or 2) unsure of the capability to maintain cleared flight level (CFL) due to turbulence or loss of all automatic altitude control systems.**

The Pilot should:	ATC can be expected to:
Maintain CFL while evaluating the situation;	
Watch for conflicting traffic both visually and by reference to ACAS, if equipped;	
If considered necessary, alert nearby aircraft by 1) Making maximum use of exterior lights; 2) Broadcasting position, FL, and intentions on 121.5 MHz (as a back up, the VHF inter-pilot air-to-air frequency, 123.45 MHz, may be used).	
Notify ATC of the situation and intended course of action. Possible courses of action include:	Obtain the pilot's intentions and pass essential traffic information.
1) Maintaining the CFL and route, provided that ATC can provide lateral, longitudinal or conventional vertical separation.	1) If the pilot intends to continue in RVSM airspace, assess traffic situation to determine if the aircraft can be accommodated through the provision of lateral, longitudinal, or conventional vertical separation, and if so, apply the appropriate minimum.
2) Requesting ATC clearance to climb above or descend below RVSM airspace if the aircraft cannot maintain CFL and ATC cannot establish adequate separation from other aircraft.	2) If the pilot requests clearance to exit RVSM airspace, accommodate expeditiously, if possible.
3) Executing the contingency maneuver shown in 1.6 and 1.7 of this RVSM POLICY AND PROCEDURES to offset from the assigned track and FL, if ATC clearance cannot be obtained and the aircraft cannot maintain CFL.	3) If adequate separation cannot be established and it is not possible to comply with the pilot's request for clearance to exit RVSM airspace, advise the pilot of essential traffic information, notify other aircraft in the vicinity and continue to monitor the situation.
	4) Notify adjoining ATC facilities/sectors of the situation.

Scenario 2: There is a failure or loss of accuracy of one primary altimetry system (e.g., greater than 200 feet difference between primary altimeters)

The Pilot should
Cross check standby altimeter, confirm the accuracy of a primary altimeter system and notify ATC of the loss of redundancy. If unable to confirm primary altimeter system accuracy, follow pilot actions listed in the preceding scenario.

EXPANDED EQUIPMENT FAILURE AND TURBULENCE ENCOUNTER SCENARIOS

Operators may consider this material for use in training programs.

Scenario 1: All automatic altitude control systems fail (e.g., Automatic Altitude Hold).

The Pilot should	ATC can be expected to
Initially	
Maintain CFL	
Evaluate the aircraft's capability to maintain altitude through manual control.	
Subsequently	
Watch for conflicting traffic both visually and by reference to ACAS, if equipped.	
If considered necessary, alert nearby aircraft by 1) Making maximum use of exterior lights; 2) Broadcasting position, FL, and intentions on 121.5 MHz (as a back-up, the VHF inter-pilot air-to-air frequency, 123.45 MHz, may be used.)	
Notify ATC of the failure and intended course of action. Possible courses of action include:	
1) Maintaining the CFL and route, provided that the aircraft can maintain level.	1) If the pilot intends to continue in RVSM airspace, assess traffic situation to determine if the aircraft can be accommodated through the provision of lateral, longitudinal, or conventional vertical separation, and if so, apply the appropriate minimum
2) Requesting ATC clearance to climb above or descend below RVSM airspace if the aircraft cannot maintain CFL and ATC cannot establish lateral, longitudinal or conventional vertical separation.	2) If the pilot requests clearance to exit RVSM airspace, accommodate expeditiously, if possible.
3) Executing the contingency maneuver shown in 1.6 and 1.7 of this RVSM POLICY AND PROCEDURES to offset from the assigned track and FL, if ATC clearance cannot be obtained and the aircraft cannot maintain CFL.	3) If adequate separation cannot be established and it is not possible to comply with the pilot's request for clearance to exit RVSM airspace, advise the pilot of essential traffic information, notify other aircraft in the vicinity and continue to monitor the situation.
	4) Notify adjoining ATC facilities/sectors of the situation.

Scenario 2: Loss of redundancy in primary altimetry systems

The Pilot should	ATC can be expected to
If the remaining altimetry system is functioning normally, couple that system to the automatic altitude control system, notify ATC of the loss of redundancy and maintain vigilance of altitude keeping.	Acknowledge the situation and continue to monitor progress.

Scenario 3: All primary altimetry systems are considered unreliable or fail

The Pilot should	ATC can be expected to
Maintain CFL by reference to the standby altimeter (if the aircraft is so equipped).	
Alert nearby aircraft by 1) Making maximum use of exterior lights; 2) Broadcasting position, FL, and intentions on 121.5 MHz (as a back-up, the VHF inter-pilot air-to-air frequency, 123.45 MHz, may be used.)	
Consider declaring an emergency. Notify ATC of the failure and intended course of action. Possible courses of action include:	Obtain pilot's intentions, and pass essential traffic information.
1) Maintaining CFL and route, provided that ATC can provide lateral, longitudinal or conventional vertical separation.	1) If the pilot intends to continue in RVSM airspace, assess traffic situation to determine if the aircraft can be accommodated through the provision of lateral, longitudinal, or conventional vertical separation, and if so, apply the appropriate minimum.
2) Requesting ATC clearance to climb above or descend below RVSM airspace if ATC cannot establish adequate separation from other aircraft.	2) If the pilot requests clearance to exit RVSM airspace, accommodate expeditiously, if possible.
3) Executing the contingency maneuver shown in 1.6 and 1.7 of this RVSM POLICY AND PROCEDURES to offset from the assigned track and FL, if ATC clearance cannot be obtained.	3) If adequate separation cannot be established and it is not possible to comply with the pilot's request for clearance to exit RVSM airspace, advise the pilot of essential traffic information, notify other aircraft in the vicinity and continue to monitor the situation.
	4) Notify adjoining ATC facilities/sectors of the situation.

Scenario 4: The primary altimeters diverge by more than 200 ft (60 m)

The Pilot should
Determine the defective system through the normal airplane integrated comparator warning system or in the absence of such a system, establish trouble-shooting procedures comparing the primary altimeters to the standby altimeter (corrected using the correction card)
If the defective system can be determined, couple the functioning altimeter to the altitude keeping device in use.
If the defective system cannot be determined, follow the guidance in Scenario 3 for failure or unreliable altimeter indications of all primary altimeters

Scenario 5. Turbulence (greater than moderate), which the pilot believes, will impact the aircraft's capability to maintain flight level.

The Pilot should	ATC can be expected to
Watch for conflicting traffic both visually and by reference to ACAS, if equipped.	
If considered necessary, alert nearby aircraft by 1) Making maximum use of exterior lights; 2) Broadcasting position, FL, and intentions on 121.5 MHz (as a back-up, the VHF inter-pilot air-to-air frequency, 123.45 MHz, may be used.)	
Notify ATC of intended course of action as soon as possible. Possible courses of action include:	
1) Maintaining CFL and route, provided that ATC can provide lateral, longitudinal or conventional vertical separation.	1) Assess traffic situation to determine if the aircraft can be accommodated through the provision of lateral, longitudinal, or conventional vertical separation, and if so, apply the appropriate minimum.
2) Requesting flight level change, if necessary.	2) If unable to provide adequate separation, advise the pilot of essential traffic information and request pilot's intentions.
3) Executing the contingency maneuver shown in 1.6 and 1.7 of this RVSM POLICY AND PROCEDURES to offset from the assigned track and FL, if ATC clearance cannot be obtained and the aircraft cannot maintain CFL.	3) Notify other aircraft in the vicinity and continue to monitor the situation.
	4) Notify adjoining ATC facilities/sectors of the situation.

Appendix B

PHASEOLOGY RELATED TO RVSM OPERATIONS

Controller-Pilot phraseology:

Message	Phraseology
For a controller to ascertain the RVSM approval status of an aircraft:	(call sign) CONFIRM RVSM APPROVED
<p>For a pilot to report non-RVSM approval status:</p> <ul style="list-style-type: none"> i. on the initial call on any frequency within the RVSM airspace (controllers shall provide & readback with this same phrase),and ii. in all requests for flight level changes pertaining to flight levels within the RVSM airspace; and iii. in all read-backs to flight level clearances pertaining to flight levels within the RVSM airspace <p>Additionally, except for State aircraft, pilot shall include this phrase to read back flight level clearances involving the vertical transit through FL 290 or FL 410</p> <p><i>See examples that follow.</i></p>	NEGATIVE RVSM
For a pilot to report RVSM approval status	AFFIRM RVSM
For a pilot of a non-RVSM approved State aircraft to report non-RVSM approval status, in response to the phrase (call sign) CONFIRM RVSM APPROVED.	NEGATIVE RVSM STATE AIRCRAFT
Denial of clearance into the RVSM airspace:	(call sign) UNABLE CLEARANCE INTO RVSM AIRSPACE, MAINTAIN [or DESCEND TO, or CLIMB TO] FLIGHT LEVEL (number)
For a pilot to report when severe turbulence affects the aircraft's capability to maintain the height-keeping requirements for RVSM.	UNABLE RVSM DUE TURBULENCE*
<p>For a pilot to report that the aircraft's equipment has degraded en-route below that required for flight within the RVSM airspace. (See Appendix A)</p> <p><i>(This phrase is to be used to convey both the initial indication of the non-MASPS compliance, and henceforth, on initial contact on all frequencies within the lateral limits of the RVSM airspace until such time as the problem ceases to exist, or the aircraft has exited the RVSM airspace.)</i></p>	UNABLE RVSM DUE EQUIPMENT*
For a pilot to report the ability to resume operations within the RVSM airspace after an equipment or weather-related contingency.	READY TO RESUME RVSM
For a controller to confirm that an aircraft has regained its RVSM approval status, or to confirm that the pilot is ready to resume RVSM operations.	REPORT ABLE TO RESUME RVSM

- Example 1:** A non-RVSM approved aircraft, maintaining FL 260, subsequently requests a climb to FL 320.
 Pilot: (call sign) REQUEST FL 320, NEGATIVE RVSM
 Controller: (call sign) CLIMB TO FL 320
 Pilot: (call sign) CLIMB TO FL 320, NEGATIVE RVSM
- Example 2:** A non-RVSM approved aircraft, maintaining FL 260, subsequently requests a climb to FL 430.
 Pilot: (call sign) REQUEST FL 430, NEGATIVE RVSM
 Controller: (call sign) CLIMB TO FL 430
 Pilot: (call sign) CLIMB TO FL 430, NEGATIVE RVSM
- Example 3:** A non-RVSM approved aircraft, maintaining FL 360, subsequently requests a climb to FL380.
 Pilot: (call sign) REQUEST FL 380, NEGATIVE RVSM
 Controller: (call sign) CLIMB TO FL 380
 Pilot: (call sign) CLIMB TO FL 380, NEGATIVE RVSM
- Example 4:** A non-RVSM approved civil aircraft, maintaining FL 280, subsequently requests a climb to FL320.
 Pilot: (call sign) REQUEST FL 320, NEGATIVE RVSM
 Controller: (call sign) UNABLE CLEARANCE INTO RVSM AIRSPACE, MAINTAIN FL 280

FLIGHT LEVEL ALLOCATION SCHEME (FLAS) FOR SOUTH CHINA SEA AREA

ATS Route	No-Pre-Departure Coordination (No-PDC) Flight Levels. <i>Other levels available with prior approval</i>
G474/L628 B202/L628	EB – FL 330, 370, 410 WB – FL 280, 340
N891	SB – FL 330 NB – FL 260, 300, 380
A1	EB – FL 290, 330, 370, 390, 410 WB – FL 280, 300, 340, 380, 400
R468/M768	EB – FL 270, 330, 410 WB – FL 300, 380
A202	EB – FL 290, 330, 370, 390, 410 WB – FL 280, 300, 340, 380, 400
	Note: Implemented 14 Jan 2008 in Bangkok FIR

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

2.1 Provision of ATFM Services

- 2.1.1 ATFM services are provided by Aeronautical Radio of Thailand LTD (AEROTHAI) from the Bangkok Air Traffic Flow Management Unit (ATFMU) at Bangkok ACC. ATFM services will be limited to calculation, promulgation and management of mandatory Allocated Wheels Up Time (AWUT) and Kabul FIR flight level, ATS route and entry fix time for each affected flight.
- 2.1.2 Air Navigation Services Providers (ANSPs) retain responsibility for the tactical management of flights that are subject to ATFM. 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.
- 2.1.3 The ATFMU utilizes the automated, web based Bay of Bengal Cooperative ATFM System (BOBCAT) in meeting its ATFM responsibilities. These responsibilities will be managed in coordination with aircraft operators and ANSPs in the FIRs concerned.
- 2.1.4 The ATFMU operates on 24 hour basis and is responsible for westbound flights entering the Kabul FIR at specified times, flight levels and ATS routes in accordance with 2.2 of this procedures. The objectives of these ATFM services are to:
 - a) Reduce ground and en-route delays;
 - b) Maximize capacity and optimize the flow of air traffic within the area;
 - 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 future workload in the light of forecast increased traffic flows within the area.

2.2 ATFM affected ATS routes, flight levels and applicable hours.

- 2.2.1 All westbound flights intending to enter the Kabul FIR between 2000UTC and 2359UTC daily on ATS routes A466, L750, N644 from FL280 to FL390 inclusive and G792/V390 from FL310 to FL390 inclusive shall comply with the ATFM procedures contained in this procedures. This includes a mandatory requirement for all flights to obtain a specific ATFM slot allocation from the ATFMU (including AWUT) for entry into the Kabul FIR during the period mentioned above.
- 2.2.2 Flight who plan to enter Kabul FIR without an AWUT and entry slot (comprising flight level, ATS route and entry fix time) 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.
- 2.2.3 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.

2.3 Flights Exempted from BOBCAT ATFM

- 2.3.1 The following flights are exempted from the ATFM procedures:
 - a) Humanitarian or medical flights
 - b) State aircraft with Head of State onboard
- 2.3.2 Flights exempted from ATFM procedures shall indicate the exemption in their flight plan (Field 18 – STS-BOB ATFM EXMP).
- 2.3.3 *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 VTBBZDX.

2.4 Mandatory AWUT and Kabul FIR Slot allocation

- 2.4.1 Affected flights shall obtain the mandatory AWUT, Kabul FIR entry time, flight level and ATS route from the BOBCAT system. The AWUT and Kabul slot allocation will enable ANSPs to tactically control westbound flight 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.

Kabul FIR Entry point : At SERKA for route SERKA B466 PAROD all westbound flights intending to enter the Kabul FIR between 2000 and 2359 daily on ATS route B466 between SERKA and PAROD from FL310 to FL390 inclusive shall comply with ATFM Procedures including Mandatory requirement to obtain ATFM slot allocation from Bangkok ATFMU

- 2.4.2 The application, calculation and distribution of AWUT and Kabul FIR entry fix slot allocations will be managed via internet access to the BOBCAT system in accordance with the ATFM operation procedure in 2.5.

2.5 BOBCAT-Operating Procedures

- 2.5.1 All affected flights are required to submit slot requests to the BOBCAT system by logging onto <https://www.bobcat.aero> between 0001 and 1200UTC on day of flight and completing the electronic templates provided.
- 2.5.2 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.
- 2.5.3 Slot Allocation Process
- 2.5.3.1 The slot allocation process is divided into 3 phases, namely the slot request submission. Initial slot allocation and finally slot distribution to aircraft operators and ANSPs.
- 2.5.4 Slot Request Submission
- 2.5.4.1 Slot requests including preferred ATS route, flight level and Maximum Acceptable Delay (MAD) should be lodged between 0001UTC and 1200UTC on the day of flight. Slot requests may subsequently be amended prior to 1200UTC, which is the cut-off time. 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.
- 2.5.4.2 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 entry fix time) should expect non-preferred routes and/or flight levels, enroute holding and/or diversion around Kabul FIR.
- 2.5.4.3 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.
- 2.5.4.4 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.
- 2.5.5 Slot Allocation and Distribution.
- 2.5.5.1 Slot allocation will commence at the cut-off time at 1200UTC. 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.
- 2.5.5.2 After the slot allocation has been published at <http://www.bobcat.aero>, aircraft operators 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.
- 2.5.5.3 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>.
- 2.5.6 Submission of ATS Flight Plan
- 2.5.6.1 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.
- 2.5.6.2 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.

2.6 Aircraft Operator/Pilot in Command and ANSP Responsibilities

Aircraft Operator/Pilot in Command

- 2.6.1 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

- 2.6.2 departure time. PIC shall be kept informed by their operators of the AWUT, Kabul FIR entry fix times and flight parameters (route/level) nominated by BOBCAT.
- 2.6.3 The PIC, in collaboration with ATC, shall arrange take-off as close as possible to the AWUT in order to meet the Kabul FIR slot time.

ANSPs

- 2.6.4 In accordance with ICAO PANS ATM provisions, flights with an ATFM slot allocation should be given priority for take off to facilitate compliance with AWUT
- 2.6.5 AWUT shall be included as part of the initial ATC clearance. In collaboration with PIC, Aerodrome Control shall ensure that every opportunity and assistance is granted to a flight to meet AWUT and allocated entry fix times at Kabul FIR.

2.7 Coordination procedure between Aircraft Operator/Pilot in Command, ANSPs and Bangkok AFTMU to be applied within the Bangkok FIR

- 2.7.1 The 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).
- 2.7.2 The 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.
- 2.7.3 Prior to departure and before obtaining an Airway Clearance, in circumstances where it becomes obvious that the Kabul slot time will not be met, a new slot allocation should be obtained as soon as possible via aircraft operators/flight dispatcher as primary to avoid frequency congestion, the alternative means via Ground Control or Clearance Delivery and the ATFMU. Early advice that the Kabul slot time will be missed also enables the slots so vacated to be efficiently reassigned to other flights.
- 2.7.4 The PIC shall include the AWUT in the initial ATC clearance request.
- 2.7.5 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 Airway Clearance has been obtained, PIC shall advise Ground Control of the missed slot and obtains new AWUT specified in 2.7.3. If it becomes essential, the ATC Clearance may be cancelled.
- 2.7.6 Prior to departure and after the aircraft has left the gate, in the event that the aircraft is unable to meet the Kabul slot time, when requested by the PIC, Aerodrome Control shall assist the PIC in coordination with Bangkok ACC and the ATFMU for a revised slot allocation.
- 2.7.7 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.

2.8 ATFM Operations for Departing Aircraft from Suvarnabhumi Airport (VTBS)

- 2.8.1 To increase the effectiveness for departing aircraft from VTBS during the ATFM period and to ensure priority departure in accordance with AWUT, the following procedures are required for all ATFM related flights;
- Before obtaining an Airway Clearance, ensure a flight is ready at least 25 minutes prior to the allocated AWUT (the additional 5 minutes buffer to AWUT should not be taken into account under this provision),
 - Radio communication with Suvarnabhumi Ground Control shall also be established within 5 minutes of enroute ATC clearance being received.
 - Flights that do not adhere to the procedures mentioned in a) and/or b) above, will be considered as unready and may result in withdrawal of Airway clearance as well as AWUT.
 - 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 of taxi than the Standard Taxi Time (STT). In these cases, ATC may delay the pushback and start-up procedures in order for the aircraft to have a smooth transition to the holding point.

2.9 Basic computer requirement.

- 2.9.1 Aircraft operators and ATS units involved are required to have computer equipment capable of connecting to the BOBCAT website <http://www.bobcat.aero> via the Internet and satisfying the following minimum technical requirements:
- A personal computer of any operating system with the following characteristics;

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

2.10 ATFM Users Handbook

- 2.10.1 Supporting documentation, including detailed information in respect of the 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 <http://www.bobcat.aero>
- 2.10.2 ANSPs and aircraft operators shall ensure that they are conversant with and able to apply the relevant procedures described in the ATFM Users Handbook.

2.11 Contingency Procedures

- 2.11.1 In the event that an aircraft operator or ATS unit is unable to access the ATFMU website, the ATFMU shall be contacted via the alternative means (telephone, fax, AFTN) described in 2.12.
- 2.11.2 Contingency procedures for submission of slot request, including activation of Contingency Slot Request Templates (CSRT), are included in the ATFM Users Handbook.
- 2.11.3 In the event of system failure of BOBCAT, ATFMU shall notify all parties concerned and advise that 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.

2.12 ATFM System Fault Reporting

- 2.12.1 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.
- 2.12.2 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 feed back to the parties concerned to enable remedial action.

2.13 Address of Air Traffic Flow Management Unit (ATFMU)

- 2.13.1 The ATFMU may be contacted as follows;
 - Unit Name: Bangkok ATFMU
 - Telephone: +66 2287 8024, +66 2287 8025
 - Fax: +66 2287 8027
 - Tel/Fax: +66 2287 8026
 - E-mail: atfm@bobcat.aero
 - AFTN: VTBBZDZX
 - Website: <http://www.bobcat.aero>

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: _____

ENR 1.9 AIR TRAFFIC FLOW MANAGEMENT (ATFM)

Air Traffic Management

- Air Traffic Management for flight operating on ATS routes A202 , W21 / R474 , B346 and R215
 1. Flightplaning for traffic transiting from Bangkok FIR into Vientiane FIR should be as follows:
 - 1.1 Flight intends to operate on ATS route B218 within Vientiane FIR should flightplan via B346 or R215
 - 1.2 Flight intends to operate on ATS route R474 between 0100-1000 UTC on Monday-Friday should flightplan via W21 CMP R474 vice versa
 - 1.3 R474 is available as follows:
 - a) Monday-Friday between 1001-0059 UTC
 - b) H24 for Saturday, Sunday and Public holiday
 2. Flight level assignment will be as follows:
 - 2.1 B346
 - a) All odd flight level (RVSM table)
 - b) Pre-Departure Coordination (PDC): FL270, FL310, FL330
 - 2.2 R215 : NO-PDC FL310
 - 2.3 R474 and W21 CMP R474:
 - a) All odd flight level (RVSM table)
 - b) Pre-Departure Coordination (PDC): FL270, FL330
 - 2.4 A202 : NO-PDC FL290, FL330, FL370, FL390, FL410, FI450
- For facilitate of Air Traffic Flow Management on A1, A202 and W1 overfly aircraft shall flightplan via BKK A1 SELKA DCT RAMEI A202
- Control frequency for aircraft on G474 for an airspace management purpose aircraft flying on G474 within Bangkok FIR (BKK-MENAM VV) to contact Bangkok Control on 135.5 MHz
- 1730-2330 daily Clearance Delivery Control (CDC) frequency changed CDC freq 120.4 MHz will be operated in substitution with 125.95 MHz

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

- Flight Level Allocation.

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

ATS route designator	NO-PDC flight level
A202	FL290 or above
G474 / L628	FL290 and FL370
R468 / M768	FL290
N891	FL330 and FL410

- Remark :
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.

- 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
R468 / P762 , R468 / L301 , P646 / N895 , L645 , A327	FL260 , FL320
L759 , L515 / M770	FL280 , FL300 , FL340

- Remark :
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.

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