STANDARD OPERATING PROCEDURE (SOP)
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SUBJECT: Hong Kong Terminal Airspace Standard Operating Procedures

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SCOPE: Outlines standard techniques for controllers staffing Hong Kong APP/DEP/TMC positions on VATSIM.

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1. PURPOSE

1.1. This Standard Operating Procedure (SOP) sets forth the procedures for all controllers providing air traffic control service at the APP/DEP/TMC level to improve communication, techniques, and to distinguish procedures that are specific to the online environment.

1.2. This Standard Operating Procedure shall be read in conjunction with HKVACC-SOP004 Annex I, which contains sector diagrams for each APP/DEP/TMC position.

2. ROLES AND RESPONSIBILITIES

2.1. The Office of Primary Responsibility (OPR) for this SOP is the team under the supervision of the Facilities Director. This SOP shall be maintained, revised, updated or cancelled by the Facilities Director. Any suggestions for modification / amendment to this SOP should be sent to the Facilities Director for review.

3. DISTRIBUTION

3.1. This SOP is intended for controllers staffing APP/DEP/TMC positions within Hong Kong FIR, as well as other controllers who interface with those controllers.

4. BACKGROUND

4.1. Over time, it has been observed that a written standard procedure is helpful to APP/DEP/TMC controllers due to the vast knowledge required to control within this complex airspace. Due to operational differences between this online environment on VATSIM and that in the real world, it is also necessary to define procedures that are specific to the online environment.

5. GENERAL PROCEDURES

5.1. Radar Separation Minima

5.1.1. The minimum lateral radar separation to be applied within all TMC sectors is **5 nautical miles**. This is reduced to **3 nautical miles** within all APP/DEP sectors.

5.1.2. The minimum vertical radar separation to be applied within all sectors is **1000 feet**.

5.2. Transfer of Control and Communications

5.2.1. Unless otherwise specified within this document, the following is applicable to the transfer of control and communications of aircraft:

- Transfer of Control – Effective upon the successful transfer of an aircraft's electronic data block from one sector to another
- Transfer of Communications – Effective upon verbally instructing a pilot to switch frequency

5.2.2. Controllers may coordinate other methods of handover (e.g. silent handoff) depending on the traffic situation.

5.3. Handoff Releases

5.3.1. Pursuant to Section 5.2, controllers may specify additional conditions alongside the transfer of control. These conditions are known as handoff releases.

5.3.2. Release For Climb

For traffic transferred on a release for climb, the receiving controller is allowed to instruct the traffic to continue their climb past the handoff level within the transferring controller's airspace.

5.3.3. Release For Descent

For traffic transferred on a release for descent, the receiving controller is allowed to instruct the traffic to continue their descent past the handoff level within the transferring controller's airspace.

5.3.4. Release For Turn

For traffic transferred on a release for turn, the receiving controller is allowed to instruct the traffic to make turns in the same general direction (no more than 45°).

5.3.5. Full Release
For traffic transferred on a full release, the receiving controller is allowed to instruct the aircraft to make turns in the same general direction (no more than 45°), and issue further climb or descent instructions.

5.3.6. Unless otherwise coordinated, traffic handed off to a different Hong Kong sector shall be released according to a written agreement. **Instructions that would cause aircraft to re-enter the transferring controller's airspace shall not be issued without prior coordination.**

5.3.7. Traffic released for climb or descent are not allowed to level off at an intermediate level higher than the cleared level until the traffic has exited the airspace of the transferring controller, except in case of a potential conflict with another aircraft.

5.4. Logon Order

5.4.1. The primary APP/DEP sector is Approach (APP). As such, it may be staffed at any time. APP and at least 1 AMC must be opened before other APP/DEP/TMC sectors may be staffed.

5.4.2. Departure North (DEN) must first be opened before Departure South (DES) or Departure High (DEH) may be opened.

5.4.3. Terminal Radar West (TMW) must first be opened before other TMC sectors may be staffed. During events, a FLC-endorsed controller covering the FLC function must first be present before other TMC sectors may be staffed. Alternatively, other TMC sectors may be opened without any FLC-endorsed controller present if explicit approval has been given by a staff member of the vACC.

5.5. Sector Airspace

5.5.1. Sector diagrams for all APP/DEP/TMC sectors are available within SOP004 Annex I.

5.6. Non-Transgression Zone (NTZ)

5.6.1. A Non-Transgression Zone (NTZ) is established between Hong Kong and Zhuhai airspace to permit independent radar operations by each unit. Radar controllers shall closely monitor the flight paths of traffic in the adjacent area to ensure that they do not enter the NTZ unless it has been pre-coordinated with Zhuhai. Block coordination should not be used. The normal radar vector buffer distance of "half radar separation" (i.e. 1.5 NM or 2.5 NM) shall be used outside the NTZ.

5.7. Kai Tak (VHHX)

5.7.1. As Kai Tak International Airport (VHHX) is closed in the real world, there is no official sectorisation for handling Kai Tak traffic. Aircraft flying to / from Kai Tak shall be individually coordinated between APP/DEP/TMC. Controllers shall also note that certain Kai Tak SID/STAR/IAPs conflict with those of Hong Kong and Macau, therefore controllers shall be prepared to separate Kai Tak traffic against other traffic where necessary. Notwithstanding the above, the following procedures shall be applied for Kai Tak traffic.

5.7.2. When Kai Tak AMC is open, Kai Tak AMC will obtain a release from APP/DEP prior to releasing any departures.

5.7.3. When RWY 07L/C/R are in use at HKIA, APP shall pass the GOLF estimate to AMC at least 5 minutes prior to that estimate for IGS RWY 13 arrivals unless otherwise coordinated. AMC **is not** permitted to release any departures in the period between that estimate and when the IGS arrival has passed over the ATZ boundary. Unless otherwise informed by APP, AMC will be permitted to release departures after the arrival has passed over the ATZ boundary.

5.7.4. The IGS approach to RWY 13 is not procedurally separated against RWY 25L/C ILS/RNP approaches. APP shall not issue approach clearances which would result in aircraft flying both approaches simultaneously, unless positive separation can be provided.

5.7.5. When RWY 25L/C/R are in use at HKIA, APP shall pass the GOLF estimate to AMC at least 5 minutes prior to that estimate for IGS RWY 13 arrivals unless otherwise coordinated. In the period between that estimate and when the IGS arrival has passed over the ATZ boundary, AMC **is permitted** to release departures, however AMC shall restrict the initial climb of those departures to 3000 ft to avoid conflict with the IGS RWY 13 arrivals. Unless otherwise informed by APP, AMC will be permitted to release departures with the standard initial climb altitude after the arrival has passed over the ATZ boundary.

5.7.6. When Kai Tak AMC is closed, the Kai Tak ATZ is notified as closed (i.e. it becomes part of the CTR Island Zone), unless there will be a runway movement at Kai Tak within 5 minutes, in which case the Kai Tak ATZ is notified as open and is delegated from ZNC to the sector responsible for covering Kai Tak Airport top down. Once the runway movement is complete, ZNC shall be notified and the Kai Tak ATZ will be notified as closed.

5.7.7. When Kai Tak AMC is open, the Kai Tak ATZ is notified as open unless otherwise coordinated.

5.7.8. When the Kai Tak ATZ is notified as open, transit flights through the Kai Tak ATZ shall be individually coordinated and movements at the GFS Kai Tak dispersal are not permitted.

6. APPROACH (APP)

6.1. Callsigns & Frequencies

POSITION	TEXT CALL SIGN	VOICE CALL SIGN	FREQUENCY	CODE	CJS
Approach	VHHH_APP	"Hong Kong Approach"	119.100	APP	AP
Final Approach Director	VHHH_F_APP	"Hong Kong Director"	119.500	FAD	FD

6.2. Responsibilities

6.2.1. Integrate arriving aircraft streams into a single sequence.

6.2.2. Integrate aircraft that have executed a missed approach and are attempting another approach with other arriving traffic.

6.2.3. Control aircraft holding at LIMES (RWY 07L/07C/07R) or RIVMI (RWY 25L/25C/25R) when unexpected or short-term holding is necessary.

6.2.4. Control of non-standard VFR and SVFR traffic operating in Delta and South Outer CTR Zones as necessary when RWY 07 is in use.

6.2.5. During RWY 07 operations, control of Macau helicopters on IFR Routes J and L, and VFR Route C1 during SVFR conditions, between Macau ATZ and Waypoint 2 / MCU DME 20 NM.

6.2.6. When DEP/FAD is not open, cover their sector and associated responsibilities.

6.2.7. Coordinate with relevant sectors regarding any planned runway changes as advised by AMC.

6.3. General Procedures for Arriving Aircraft

6.3.1. Aircraft shall be integrated into a single stream by radar vectors / adequate speed control. During periods of high traffic, it may be beneficial to provide vectors to final or the latest approach intercept point as opposed to utilizing the RNAV transition from LIMES / RIVMI.

6.3.2. Aircraft shall be advised of the current arrival ATIS identifier and landing runway on first contact.

6.3.2.1. Under normal conditions, landings on non-arrival runway(s) require individual coordination with AMC. APP shall co-ordinate with AMC regarding any aircraft requiring a different runway at the earliest opportunity.

6.3.2.2. During periods of heavy arrival traffic, APP may opt to activate TRAM (Tactical Runway Allocations Mode) between 0000 – 1500Z after coordination with

AMC. TRAM is also activated by default whenever HKIA is operating in Arrivals Only, Departures Only, Mixed (ADM) mode. This allows arrivals to be assigned to non-arrival runway(s) without individual coordination with AMC regardless of the current operating mode at HKIA. Refer to Section 6.15 for more details regarding TRAM.

6.3.3. Aircraft under radar vectors shall be passed the estimated track-miles to touchdown as well as any speed requirements at the earliest opportunity.

6.3.4. Aircraft on the final approach track shall normally be assigned 180 KIAS to maintain until 7 DME, or 160 KIAS to maintain until 5 DME. 160 KIAS to maintain until 4 DME shall only be used if a significant catch-up situation occurs.

6.3.5. If it is necessary to assign minimum approach speed to aircraft on the final approach track, a speed of 150 KIAS shall be selected within the aircraft's datablock.

6.3.6. Specific Instructions for Runway 07 Operations

6.3.6.1. An altitude restriction of 9000ft or below at HH512 is in place to provide separation against departures. As such, aircraft arriving from ABBEY shall be descended to or below this altitude as soon as practicable upon handoff from TME.

6.3.6.2. For noise abatement, descent below 9000ft shall only be given away from populated areas.

6.3.6.3. When FAD is open, aircraft shall be assigned 4000ft and 210 KIAS prior to transfer to FAD. Appropriate spacing shall be provided by APP and descent shall be given in good time so that aircraft would be at an appropriate profile in the vicinity of LIMES.

6.3.6.4. When executing an instrument approach via LIMES, aircraft are required to track via TUTBA/TONIC/STELA before turning final for terrain clearance and separation. However, aircraft have been observed flying directly from LIMES to the FAP, instead of tracking via TUTBA/TONIC/STELA. As such, when clearing an aircraft for an instrument approach via LIMES, controllers are **strongly** advised to remind pilots of the requirement using the phraseology "from LIMES via TUTBA/TONIC/STELA cleared xxx approach runway xxx".

6.3.6.5. When there is any doubt about pilots' understanding of the correct procedure, controllers should vector the aircraft for approach or track the aircraft direct to TUTBA/TONIC/STELA and apply the following phraseology:

"from TUTBA/TONIC/STELA cleared xxx approach runway xxx".

6.3.6.6. Significant tailwind is often observed on base leg for Runway 07. Controllers shall exercise extreme caution when the reported tailwind is 20 knots or greater. It is suggested that a speed in the region of 200 KIAS be assigned by APP prior to transfer to FAD to alleviate compression on final.

6.3.7. Specific Instructions for Runway 25 Operations

6.3.7.1. For noise abatement, descent below 8000ft shall be given no more than 32nm from touchdown between 1600 – 0000Z. It is recommended that aircraft of WTC H be assigned 230 KIAS and aircraft of WTC M be assigned 210 KIAS for CDA purposes.

6.3.7.2. When FAD is open, aircraft shall be assigned 6000ft and 220 KIAS prior to transfer to FAD. Appropriate spacing shall be provided by APP and descent shall be given in good time so that aircraft would be at an appropriate profile in the vicinity of TEDUR.

6.3.7.3. When executing an instrument approach from RIVMI (except for Runway 25R ILS approach), aircraft are required to track via LIKBI/CANUP/RUNSU before turning final for terrain clearance and separation. However, aircraft have been observed flying directly from RIVMI to the FAP, instead of tracking via LIKBI/CANUP/RUNSU. As such, when clearing an aircraft for an instrument approach from RIVMI, controllers are strongly advised to remind pilots of the requirement using the phraseology "from RIVMI via LIKBI/CANUP/RUNSU cleared xxx approach runway xxx".

6.3.7.4. When there is any doubt about pilots' understanding of the correct procedure, controllers should vector the aircraft for approach or track the aircraft direct to LIKBI/CANUP/RUNSU and apply the following phraseology:

"from LIKBI/CANUP/RUNSU cleared xxx approach runway xxx".

6.3.7.5. To ensure sufficient clearance against terrain, an **RNAV Transition to ILS 25R** is published for use from RIVMI/BOKAG. Radar vectors may only be provided up to RUNSU, where aircraft shall be instructed to join and descend via the RNAV transition, using the phraseology "from (waypoint) descend via RNAV transition". ILS approach clearance shall be provided from TOPUN once the aircraft is on the extended centerline track for RWY 25R, using the phraseology "from TOPUN, cleared ILS approach RWY 25R". **Aircraft observed to "skip" the RNAV transition or not follow published altitude**

restrictions shall be re-sequenced from RUNSU.

6.3.8. Procedures with FAD open

6.3.8.1. A Final Approach Director (FAD) position is established to reduce R/T loading on APP and achieve more accurate and consistent inter-arrival spacing.

6.3.8.2. Procedures for APP

APP is responsible for combining the arrival streams and establishing a single landing sequence prior to transfer to FAD.

Aircraft shall be instructed to contact FAD with their callsign only. Aircraft shall be transferred to FAD no earlier than 10 nm from the sector boundary.

The following shall be coordinated between APP and FAD:

- Ad-hoc spacing requirements
- Last aircraft for old runway/first for new runway during runway change
- Completion of airspace changeover with DEP and release of new FAD airspace

Due to the potential delay for aircraft to establish 2-way communication with FAD during frequency change, headings assigned by APP shall make allowance for at least 30-second time lapse. Traffic shall **not** be handed off on a heading divergent from FAD airspace.

When applying 3.5 nm final spacing, it is recommended that aircraft be handed off to FAD with 4-5 nm in trail spacing. To achieve 4-5 nm final spacing, it is recommended that aircraft be handed off to FAD with 5-6 nm in trail spacing. Controllers shall note that these figures are merely for reference and increased / reduced spacing may be required depending on winds and other factors.

As a general guideline, when applying 3.5 nm final spacing, a maximum of 6 aircraft can be accommodated in FAD07 airspace and not more than 7 aircraft in FAD25 airspace.

6.3.8.3. Procedures for FAD

Aircraft will be transferred in a single sequence from APP. FAD shall position aircraft onto the final approach track with the required inter-arrival spacing.

FAD shall inform APP **immediately** should there be difficulty in sustaining the required inter-arrival spacing.

Aircraft shall be retained on frequency until 5nm final before transferring to AMC. Earlier transfers may occasionally be necessary if AMC is required to pass significant operational information (e.g. windshear warning or traffic information).

6.4. Instrument Approaches

6.4.1. The following instrument approaches are available for use:

RUNWAY	INSTRUMENT APPROACH PROCEDURE	FEED IN
RWY 07L/07C	ILS, LOC, RNP	LIMES
RWY 07R	ILS, LOC, RNP (Z)	LIMES
RWY 07R	RNP (Y)	TD
RWY 25L/25C/25R	ILS, LOC, RNP (Z)	RIVMI
RWY 25L/25C/25R	RNP (Y)	LUDLA

6.4.2. Controllers shall be aware that most aircraft plan for a normal rate of descent of 3°, (i.e. approximately 1000ft per 3nm). When vectoring aircraft, controllers shall provide track miles to touchdown and monitor aircraft's rate of descent as required.

6.5. ILS Approaches

6.5.1. Aircraft making an ILS approach shall be established on the LOC by the Final Approach Point.

ILS APPROACH	FINAL APPROACH POINT
RWY 07L	ILS/DME 5.3NM
RWY 07C	ILS/DME 5.3NM
RWY 07R	ILS/DME 5.3NM
RWY 25L	ILS/DME 14.1NM
RWY 25C	ILS/DME 14.1NM

6.5.2. Due to obstacle clearance constraints, controllers shall **not** issue radar vectors to intercept the ILS for RWY 25R. Vectors may only be issued up to RUNSU, where aircraft shall then join and descend via the RNAV transition.

6.5.3. To ensure a stabilized approach, a lead-in distance of at least 1 nm level flight must be provided prior to intercepting the glidepath from below. The following ILS glidepath intercept points are provided for reference:

AIRCRAFT ALTITUDE	GLIDEPATH INTERCEPT POINT
4500ft	ILS/DME 15NM
1700ft	ILS/DME 5.5NM
1500ft	ILS/DME 5NM

6.5.4. Aircraft vectored for RWY 07L / 07C ILS approach shall only be given descent to 1500ft when the aircraft's track is within the 1500ft MVA area until intercepting the IZSL/IZSC LOC.

6.5.5. Due to shielding of the RWY 07R LOC signal by terrain, aircraft vectored for RWY 07R ILS approach shall not be instructed to descend below 1700ft until established on the IZSR LOC.

6.5.6. Further to Section 6.5.2, aircraft vectored for RWY 25R ILS approach shall not be instructed to descend below 4500ft, except when providing clearance to descend via the RNAV transition.

6.6. LOC Approaches

6.6.1. Aircraft making a LOC approach shall not be descended below the published altitude for the appropriate approach procedure until they are established on the LOC.

6.6.2. Aircraft making a LOC approach shall be established on the LOC at least 1nm prior to the normal descent point.

PUBLISHED ALTITUDE	TYPE OF APPROACH	NORMAL DESCENT POINT
4500ft	RWY 25R LOC	VH510
	RWY 25C LOC	HH834
	RWY 25L LOC	HH814
1500ft	RWY 07L LOC	ILS/DME 6NM
1700ft	RWY 07C LOC	ILS/DME 6NM
	RWY 07R LOC	ILS/DME 6NM

6.7. RNP Approaches

6.7.1. Aircraft shall not be given any RNP approach by default unless explicitly requested by the pilot, except when promulgated by the real world ATIS **and** when agreed to by APP.

6.7.1.1. Cargo aircraft may request and be assigned RNP AR approach to the south runway between 1500 – 1759Z. Controllers shall endeavour to accommodate such requests subject to prevailing traffic conditions.

6.7.1.2. Notwithstanding the above, the RNP Y approach to RWY 07R is not normally assigned unless due to weather affecting the nominal approach path via LIMES.

6.7.2. As far as practicable, aircraft making an RNP approach should be assigned descent via the MVA and cleared for the approach from the IAF.

6.7.3. If approach clearance from the IAF is not practicable, controllers may either track the aircraft to an appropriate waypoint on the procedure or vector the aircraft to intercept the track of the procedure. Vectors shall only be given up to the following waypoints as aircraft are unable to commence approach beyond these waypoints:

RNP APPROACH	LATEST POINT OF INTERCEPTION
RNP RWY 07L	VH708
RNP RWY 07C	HH730
RNP Z RWY 07R	VH721
RNP Y RWY 07R	NOLIB
RNP Z RWY 25L	LIKBI
RNP Z RWY 25C	HH835
RNP Z RWY 25R	VH505
RNP Y RWY 25L	LUDLA
RNP Y RWY 25C	
RNP Y RWY 25R	

6.7.4. The “G” STARs will normally be assigned to aircraft intending to conduct the RNP Y approach to RWY 25L / 25C / 25R. Controllers shall note that the published track of these STARs differs from the regular STARs, with the STAR ending at LUDLA instead of RIVMI.

6.7.5. As the RNP Y approach to RWY 07R is not connected to any arrival procedure, aircraft intending to conduct this approach shall be provided with radar vectors to TD DVOR. Such aircraft shall also be given the QNH alongside the approach clearance if the approach is to be commenced at FL110.

6.7.6. Controllers are reminded that the RNP Z approach to RWY 07R has an IF of ARGON (co-located with STELA) as opposed to STELA. As such, approach clearances "from STELA" are not valid in this case.

6.8. Missed Approaches

6.8.1. Aircraft that have executed a missed approach shall initially be transferred to DEN for RWY 07L / 07C, DES for RWY 07R / 25L and FAD for RWY 25C / 25R. DES / DEN / FAD is required to point out traffic carrying a missed approach to APP and coordinate to re-sequence the aircraft with other arriving traffic. Unless otherwise coordinated, aircraft shall be instructed to follow the published standard missed approach procedure.

6.8.2. FAD shall liaise any RWY 25C / 25R missed approach with APP at the first possible opportunity. During periods of continuous traffic flow, the procedural track from GONAT or RNAV transition from BOKAG shall not be used. FAD shall expect to transfer aircraft to APP for re-sequencing.

6.8.3. The lowest assignable altitude for RWY 07C / 07L / 25C / 25R missed approach traffic following the standard missed approach is 4300ft due to terrain clearance.

6.8.4. The lowest assignable altitude for RWY 07R / 25L missed approach traffic following the standard missed approach is 3000ft provided the aircraft remains on the standard missed approach track.

6.8.5. RWY 25C / 25R missed approach procedure requires a climb to 4000ft and a right turn to VH523 before climbing to 5000ft. In the absence of conflicting traffic from Macau, FAD may cancel the 4000ft restriction to facilitate a quicker climb to 5000ft.

6.9. Visual Approaches

6.9.1. Owing to terrain, airspace limitations, proximity to local VFR operations and environmental concerns, there is no established visual approach procedure for HKIA. All IFR arrivals are normally expected to carry out an Instrument Approach Procedure. Visual approaches may be approved only in the following exceptional circumstances:

- When the aircraft is on final and unable to continue the instrument approach due to airborne and/or ground equipment failure, or poor positioning, **and the pilot has reported runway in sight and can continue visually;**
  or
- In an emergency when a visual approach is considered appropriate

6.9.2. When clearing an aircraft for visual approach, the controller must take into account the position and altitude of the aircraft relative to terrain and airspace boundary.

6.9.3. ATC remains responsible for separation of the IFR arrival on visual approach with other IFR and VFR aircraft. Controllers should be fully aware of the lack of published missed approach procedure and should be prepared to separate the aircraft in the event of a baulked landing.

6.9.4. Prompt co-ordination between APP and AMC is required when approving a visual approach, **with an agreed missed approach manoeuvre.**

6.10. Approach Sequence

6.10.1. APP should normally sequence arrivals from MANGO, MURRY and MUSEL into a single arrival stream.

6.10.2. APP shall integrate the arriving aircraft streams and aircraft that have carried out a missed approach into an approach sequence that provides the appropriate in-trail final approach spacing applied from the landing threshold.

6.11. Co-ordination with ADC

6.11.1. FAD may apply 3 NM longitudinal radar separation for arrivals on alternate runways (2.7 NM straight-line radar separation within FAD sector airspace), subject to the following conditions:

- Co-ordination with AMC
- Nominal tailwind component 0 KTs
- Maximum crosswind component 15 KTs
- Relevant aircraft to maintain 125 – 160 KIAS from 4 DME to touchdown

This is the minimum spacing when the preceding traffic is at the landing threshold. Wake turbulence separation shall be applied until both aircraft are established on their respective final approach tracks. (This reduced final approach spacing does not override the inter-arrival spacing of 8 NM between successive south / centre runway arrivals.)

6.11.2. During single runway operations when there are no departures and subject to co-ordination with AMC, final approach spacing may be reduced to not less than 4 NM subject to wake turbulence separation. Spacing may have to be increased in the event of tailwinds.

6.11.3. AMC will not issue any instructions or advice that would reduce the established separation without prior co-ordination with FAD.

6.12. Holding

6.12.1. Aircraft should hold at LIMES (RWY 07L/07C/07R) or RIVMI (RWY 25L/25C/25R) when unexpected or short-term holding is necessary (e.g. temporary runway closure, during runway change).

6.12.2. APP will issue Expected Approach Time to aircraft holding under their control at LIMES or RIVMI when delays are expected to be 15 minutes or more.

6.13. Runway Change Procedure (Operating Mode)

6.13.1. When a change of operating mode is considered necessary by AMC, they shall first seek approval from APP/FAD. Once this approval has been given, AMC shall coordinate with APP/FAD regarding the last arrival and departure under the old operating mode and the first arrival and departure under the new operating mode.

6.14. Runway Change Procedure (Runway Direction)

6.14.1. When a change of runway direction is considered necessary by AMC, they shall first seek approval from APP/FAD. Once this approval has been given, APP shall coordinate with TMC as appropriate (including the issuance of STAR clearance for the new runway(s) and the expected arrival time of the first aircraft for the new runway(s)).

6.14.2. APP shall advise AMC of the callsign of the last arrival for the old runway(s). Additionally, APP shall issue AMC with an expiry time for departing aircraft after which all aircraft shall depart via the new runway(s).

6.14.3. APP shall advise TR and Macau Tower of the runway change, and they shall issue revised SID/STAR clearances as appropriate.

6.14.4. APP shall coordinate with DEP sectors for a plan of airspace changeover and resolve conflicts with departures from the old runway(s). FAD shall be advised of the last arrival to the old runway(s).

6.14.5. FAD shall continue to handle final approach sequencing of aircraft until the last aircraft has been transferred to AMC. Once transferred, FAD shall coordinate with APP to assume control of new FAD airspace.

6.15. Tactical Runway Allocations Mode (TRAM)

6.15.1. Under periods of heavy arrival traffic, APP may opt to activate Tactical Runway Allocations Mode (TRAM) between 0000 – 1500Z after coordination with AMC, which allows arrivals to be assigned to non-arrival runways without individual coordination with AMC regardless of the current operating mode at HKIA. TRAM is also activated by default whenever HKIA is operating in Arrivals Only, Departures Only, Mixed (ADM) mode. Controllers shall note the following requirements when TRAM is activated:

- TRAM is not normally available when using the North and Centre Runways for arrivals; if it is necessary to activate TRAM for those runways, the inter-arrival spacing for a North arrival following a Centre arrival shall be 6 NM, while the inter-arrival spacing for a Centre arrival following a North arrival shall be 5 NM.

- The nominal inter-arrival spacing for South Runway arrivals shall be 8 NM to facilitate departures; when there are no departures and subject to coordination with AMC this may be reduced to 4 NM (3.5 NM if preceding aircraft is of WTC M), however if the previous South arrival vacates to the south, then this spacing may only be reduced to 5 NM.

- When operating in Arrivals Only, Departures Only, Mixed (ADM) mode, the maximum arrival rate for the South Runway is 6-8 aircraft per hour.

- When operating in segregated mode, the maximum arrival rate for the South Runway is strictly 6 aircraft per hour.

- It is the responsibility of FLC (or TMC when FLC offline) to assign aircraft to the South Runway. Priority shall be given to aircraft parking at the South Cargo Apron, BAC or GFS. Passenger arrivals may also be assigned to the South Runway if capacity allows.

6.16. Inter-Arrival Spacing

6.16.1. The table below lists the inter-arrival spacing to be applied by FAD at the runway threshold. Spacing in brackets requires co-ordination with AMC.

6.16.2. Inter-arrival spacing below 4 NM is only authorised for aircraft of similar speed and vertical profile. All IAPs at HKIA are designed considering these factors. As such, where aircraft in-trail do not conduct IAPs of the same type (e.g. RNP / ILS), then a minimum inter-arrival spacing of 4 NM shall be applied, subject to wake turbulence separation minima and other factors (e.g. successive south / centre arrivals will require 8 NM regardless).

OPERATING MODE	RUNWAY SPACING
Successive North	3.5NM
Successive South / Centre	8NM
Alternate Runways	3.5NM (3NM)
Single Runway – with Departures	8NM
Single Runway – without Departures	4NM

6.17. Delta and South Outer CTR Zones Delegation

6.17.1. The Delta CTR Zone is delegated to FAD when RWY 07L/C/R are in use. VFR and SVFR traffic that normally follow standard routes and altitudes, may normally continue to operate on ZNC frequency, e.g. Macau helicopters on routes A and B1. ZNC will coordinate any non-standard route or altitude with FAD and if necessary transfer control of the relevant traffic to FAD. FAD must take into account traffic operating on standard routes in communication with ZNC when issuing clearances to other traffic.

6.17.2. The South Outer CTR zone is delegated to FAD above 500 ft when RWY 07L/C/R are in use. VFR and SVFR traffic at 500 ft and below shall remain with ZNC but other traffic will be coordinated with FAD and if necessary transferred to FAD.

6.17.3. When RWY 07L/C/R are in use, FAD will also be responsible for handling helicopters on IFR Routes J & L between the Macau ATZ boundary and MCU DME 20NM as well as SVFR route C1 from the CTR boundary to Waypoint 2. ZNC will ensure that the FAD frequency is passed to Macau TWR with the clearance when FAD is open.

7. DEPARTURE (DEP)

7.1. Callsigns & Frequencies

POSITION	TEXT CALL SIGN	VOICE CALL SIGN	FREQUENCY	CODE	CJS
Departure South	VHHH_S_DEP	"Hong Kong Departure"	122.000	DES	DS
Departure North	VHHH_N_DEP	"Hong Kong Departure"	123.800	DEN	DN
Departure High	VHHH_H_DEP	"Hong Kong Departure"	122.650	DEH	DU

7.2. Responsibilities

7.2.1. Control of departing aircraft until transferred to the next sector.

7.2.2. Control of aircraft routing to Mainland China destinations through DEP sectors.

7.2.3. Control of aircraft executing a missed approach until transferred to APP.

7.2.4. Control of Macau arrivals from the East until transferred to MCU.

7.2.5. Control of Macau RWY 34 departures until transferred to the next sector.

7.2.6. Control of non-standard VFR and SVFR traffic operating in Delta and South Outer CTR Zones as necessary when RWY 25 is in use.

7.2.7. During RWY 25 operations, control of Macau helicopters on IFR Routes J and L, and VFR Route C1 during SVFR conditions, between Macau ATZ and Waypoint 2 / MCU DME 20 NM.

7.2.8. The following table shows the traffic handled by each DEP sector:

DEPARTURE SOUTH (DES)	DEPARTURE NORTH (DEN)	DEPARTURE HIGH (DEH)
Hong Kong South Runway Departures	Hong Kong Centre / North Runway Departures	Macau Arrivals via SMT
Macau RWY 34 Departures		Macau RWY 34 Departures
		Hong Kong Departures / Overflights to Guangzhou

7.3. General Procedures

7.3.1. When HKIA is operating in Arrivals Only, Departures Only, Mixed (ADM) mode, DES shall be responsible for the handling of south runway departures and DEN shall be responsible for the handling of centre / north runway departures.

7.3.2. When ADM mode is **not** active, DEN shall assume the responsibilities of DES. **DES shall not be opened when not operating in ADM mode.**

7.3.3. When DEH is closed, DEN shall assume the responsibilities of DEH.

7.4. Departing Aircraft

7.4.1. DEP sectors can expect AMC to expeditiously transfer departing aircraft to their frequency.

7.4.2. The lowest assignable altitude for a departure is 3000 ft provided the aircraft remains on the SID track until entering airspace with an MVA of 3000 ft or lower.

7.4.3. Aircraft on BEKOL SIDs landing Shenzhen or Guangzhou shall cross BEKOL at the transfer level. Aircraft on BEKOL SIDs overflying Guangzhou FIR shall normally cross BEKOL at or above S0480 climbing to S0690. Controllers are required to closely monitor the vertical profiles of the BEKOL departures to ensure that they are able to cross BEKOL at their transfer level or at a minimum of S0480 if climbing above. Under no circumstances should an aircraft be transferred to Zhuhai or Guangzhou Control before they have reached their transfer level or climbed above the required minimum altitude if proceeding beyond Guangzhou FIR.

7.4.4. DEP sectors shall climb aircraft with respect to the handoff agreements listed at the end of Section 7.

7.4.5. DEP sectors shall note the altitude restriction of 8000ft or below at HH382 for BEKOL departures via RWY 07R, and 9000ft or below at VANPU / VEDMU for RWY 25s. This restriction is in place to provide separation against traffic crossing above. As such, these restrictions shall be cancelled using the phraseology “cancel xxxxft level restriction” if there is no risk of potential conflict with other aircraft.

7.4.6. With respect to Section 7.4.3, controllers shall note that the final clearance to the transfer level for BEKOL departures is given by DEH. As such, DES / DEN shall climb BEKOL departures as per Section 7.4.4 and transfer to DEH.

7.4.7. Unless otherwise coordinated, DEP sectors shall provide aircraft of similar performance with a minimum of 6 NM in-trail spacing, constant or increasing, and assign 280 KIAS before hand-off to the next sector.

7.4.8. Altitude restrictions are in place for all SIDs to provide separation against arrivals. Should aircraft not be able to meet the published restrictions, alternative forms of separation should be established where necessary.

7.4.9. DES shall provide appropriate separation between Macau RWY 34 and Hong Kong departures on their respective SIDs before hand-off to TDE.

7.4.10. DEP sectors shall closely monitor departing aircraft to ensure they follow the SID tracks up to the first turning point. DEP shall ensure terrain clearance and consider noise mitigation procedures before vectoring aircraft off the SID.

When RWY 07 is in use, aircraft shall not be manoeuvred off the SID track until passing TEGUB / RAMEN or until the aircraft is above 9000ft. The SID speed restrictions must not be cancelled until after the initial right turn.

When RWY 25 is in use, aircraft shall not be manoeuvred off the SID track until passing VAMPU / VEDMU or until the aircraft is above 9000ft. All aircraft are required to route south of Hong Kong Island except for BEKOL departures.

7.4.11. Given the restrictive topographical features and airspace restrictions in the vicinity of HKIA, there is very little flexibility in manoeuvring departing aircraft and/or missed approaches in a catch-up situation. As such, vertical separation should always be applied where appropriate until other forms of separation could be positively established. Controllers are suggested to explicitly reiterate speed restrictions on the SID when required for separation due to varying aircraft climb performance.

7.5. Arriving Aircraft

7.5.1. Missed Approaches

7.5.1.1. AMC shall advise DEP of any missed approach and transfer the aircraft to DEP. DEP will not be notified of missed approaches for RWY 25C / 25R as aircraft on missed approach for RWY 25C / 25R will directly re-enter FAD airspace.

7.5.1.2. DEP shall point out missed approach traffic to APP / FAD as appropriate and unless otherwise coordinated with APP, DEP shall instruct the missed approach aircraft to continue with the published standard missed approach procedure.

7.5.1.3. The lowest assignable altitude for RWY 07R / 25L missed approach traffic is 3000 ft provided the aircraft remains on the missed approach track until entering airspace with an MVA of 3000ft or lower.

7.5.1.4. The lowest assignable altitude for RWY 07L / 07C missed approach traffic following the standard missed approach is 4300ft due to terrain clearance.

7.6. Overflights

7.6.1. Macau Departures

7.6.1.1. Departures from Macau RWY 34 enter DES sector climbing to 9000ft. Such aircraft are released for climb within Zhuhai airspace to FL120.

7.6.1.2. DES shall climb the aircraft to FL130 and transfer to DEH. DEH shall climb the aircraft with respect to the handoff agreements and transfer to the next appropriate sector.

7.6.2. Macau Arrivals

7.6.2.1. TME will transfer Macau arrivals to DEH descending to FL230. DEH shall descend Macau arrivals via SMT to FL110 (to reach by HAZEL) when clear of the airspace steps and transfer to MCU.

7.6.2.2. When holding is necessary, the BUMDI holding pattern (inbound track 269°M, left-hand pattern, 1 minute outbound leg) is available for use between FL190 – FL250. DEH shall be responsible for this holding pattern. It should be noted that this holding pattern is not procedurally separated against climbing BEKOL departures overflying Guangzhou FIR.

7.6.3. Macau Missed Approaches

7.6.3.1. Aircraft executing the ILS Z / RNP RWY 34 missed approach from Macau enter DES sector at MC411 climbing to 9000ft. The route and level after MC411 will depend on the Hong Kong runway-in-use. DES shall coordinate with MCU and FAD (RWY 07) or DEN (RWY 25) as appropriate. **Aircraft executing missed approach on other instrument approaches will require vectors.**

7.6.4. Guangzhou Arrivals

7.6.4.1. All Guangzhou arrivals will be transferred from TDC to DEH descending to reach FL220 by SAPAX and those from TME to DEH on descent to FL230 by NEDLE.

7.6.4.2. DEH shall descend the arrivals to reach the transfer level S0450 (Primary) or S0420 (Secondary) by TAMOT with respect to the relevant airspace steps.
Note: Descent to S0420 (FL138) requires coordination with Zhuhai and DES when RWY 07 in use.

7.6.5. Handoff Agreements (Hong Kong)

HK RWY	SID	ROUTE	HANDOFF LOCATION	LEVEL	TRANSFER
RWY 07	DALOL	V642 / V652	DAKIG	↑ FL140, FL160 (note 1)	DES – TDE
	PECAN	V10 / V11 / V12	SOSLU	↑ FL160	DES – TDC
	LEKEN	V601 / V611	LUBMO	↑ FL160	DEN – TDE
	DALOL	V621 / V631	LUBMO	↑ FL160	DEN – TDE
	BEKOL	Guangzhou FIR	On approaching FL160	↑ FL160	DEN – DEH
		Landing ZGSZ	BEKOL	S0180 (5900ft)	DEN – Zhuhai
		Landing ZGGG	BEKOL	S0420 (FL138) S0450 (FL148) (note 2)	DEN – Zhuhai
		Guangzhou FIR	BEKOL	At or above S0480 (FL157) ↑ S0690 (FL226)	DEH – Guangzhou
RWY 25	DALOL	V621 / V631 / V642 / V652	DAKIG	↑ FL160	DEN - TDE
	PECAN	V10 / V11 / V12	SOSLU	↑ FL160	DEN - TDC
	LEKEN	V601 / V611	LUBMO	↑ FL140, FL160 (note 1)	DES - TDE
	BEKOL	Guangzhou FIR / Landing ZGGG	HH481	↑ FL130	DES - DEH
		Landing ZGSZ	BEKOL	S0180 (5900ft) (note 3)	DES - Zhuhai
		Landing ZGGG	BEKOL	S0420 (FL138) S0450 (FL148) (note 2)	DEH - Zhuhai
		Guangzhou FIR	BEKOL	At or above S0480 (FL157) ↑ S0690 (FL226)	DEH - Guangzhou

Note 1: FL140 shall be used when simultaneous independent departures are in progress at HKIA, otherwise FL160 shall be used.
Note 2: S0450 (FL148) requires coordination with Zhuhai.
Note 3: BEKOL departures will enter FAD airspace. Coordination shall be made with FAD to prevent conflicts with VHHH arrivals.

7.6.6. Handoff Agreements (Macau)

HONG KONG RUNWAY	SID - ROUTE	HANDOFF LOCATION	LEVEL	TRANSFER
RWY 07	All	MC311	↑ FL130 (note 1)	DES – DEH
	NUDPI – V601 / V611	DAKIG	↑ FL170, FL210 (note 2)	DEH – TDE
	CONGA – V621 / V631	DAKIG	↑ FL210	DEH - TDE
	SKATE – V642 / V652	DAKIG	↑ FL210	DEH - TDE
	ALLEY – V10 / V31 / V32	SOSLU	↑ FL210	DEH - TDC
RWY 25	All	MC315	↑ FL130	DES – DEH
	NUDPI – V601 / V611	LUBMO	↑ FL170, FL210 (note 2)	DEH – TDE
	CONGA – V621 / V631	LUBMO	↑ FL210	DEH - TDE
	SKATE – V642 / V652	LUBMO	↑ FL210	DEH - TDE
	ALLEY – V10 / V31 / V32	SOSLU	↑ FL210	DEH - TDC

Note 1: Aircraft shall cross MC311 at or above A090.

Note 2: Aircraft with RFL below S0630 (FL207) shall be climbed to FL170, while aircraft with RFL at or above S0630 (FL207) shall be climbed to FL210.

7.7. Delta and South Outer CTR Zones Delegation

7.7.1. The Delta CTR Zone is delegated to DEP when RWY 25L/C/R are in use. When more than one DEP sector is open, the DEP controllers shall coordinate amongst themselves to decide which DEP sector shall be responsible for the Delta CTR Zone.

7.7.2. Within the Delta CTR Zone, VFR and SVFR traffic that normally follow standard routes and altitudes, may normally continue to operate on ZNC frequency, e.g. Macau helicopters on routes A and B1. ZNC will coordinate any non-standard route or altitude with DEP and if necessary transfer control of the relevant traffic to DEP. DEP must take traffic operating on standard routes in communication with ZNC into account when issuing clearances to other traffic.

7.7.3. The South Outer CTR Zone is delegated to DEP above 1200 ft when RWY 25L/C/R are in use. VFR and SVFR traffic at 1200 ft and below shall remain with ZNC but other traffic will be coordinated with DEP and if necessary transferred to DEP.

7.7.4. When RWY 25L/C/R are in use, DEP will also be responsible for handling helicopters on IFR Routes J & L between the Macau ATZ boundary and MCU DME 20NM as well as SVFR route C1 from the CTR boundary to Waypoint 2. ZNC will ensure that the DEP frequency is passed to Macau TWR with the clearance when DEP is open.

8. TERMINAL RADAR CONTROL (TMC)

8.1. Callsigns & Frequencies

POSITION	TEXT CALL SIGN	VOICE CALL SIGN	FREQUENCY	CODE	CJS
Terminal Radar West	VHHH_W_APP	"Hong Kong Radar"	127.550	TMW	MW
Terminal Radar Low	VHHH_L_APP	"Hong Kong Radar"	125.175	TML	ML
Terminal Departure Central	VHHH_C_DEP	"Hong Kong Radar"	123.475	TDC	MC
Terminal Radar South	VHHH_S_APP	"Hong Kong Radar"	126.300	TMS	MS
Terminal Departure East	VHHH_E_DEP	"Hong Kong Radar"	133.825	TDE	MD
Terminal Radar East	VHHH_E_APP	"Hong Kong Radar"	126.500	TME	ME
Macau Approach Radar	VMMC_APP	"Hong Kong Radar"	123.950	MCU	MM

8.2. Responsibilities

8.2.1. The seven radar TMC positions (Terminal Radar East (TME), Terminal Departures East (TDE), Terminal Radar South (TMS), Terminal Departures Central (TDC), Terminal Radar West (TMW), Terminal Radar Low (TML) and Macau Approach Radar (MCU)) are designed as low level feeders of inbound / outbound traffic between Area and Approach (except for MCU, which provides Approach Radar Control service for Macau).

8.2.2. Each TMC sector normally works independent of each other. However, when AMAN is not in use or when FLC is not being staffed, then each sector shall coordinate and decide the order in which aircraft are handed off to APP. When AMAN is in use or when FLC is staffed, then arrivals shall be handed off to APP in an orderly flow and in accordance with relevant instructions from AMAN / FLC. The general principle of first come first served is to be followed except for the situation where traffic requires priority or the overall system efficiency is compromised.

8.2.3. TMC shall use speed control, radar vectors and/or holding to achieve the required spacing for APP. During heavy traffic conditions, especially if the TR controllers cannot provide the agreed in-trail spacing, holding will generally become the preferred sequencing method.

8.2.4. FLC (or TMC when FLC offline) shall append "SOUTH" into the scratchpad of any south runway arrivals when the south runway is **not** the nominated arrival runway irrespective of whether or not TRAM is active prior to handing off any such arrival to APP.

8.2.5. The primary TMC sector is TMW. When TMC is not open, TRW shall be responsible for the TMC airspace. If TRW is also not open, then APP shall be responsible for the TMC airspace.

8.2.6. When TR is closed, TMC shall be responsible for assigning the appropriate STAR to Hong Kong and Macau arrivals. There is no requirement to specify the expected landing runway.

8.2.7. TMC shall utilise the **Hong Kong TMA** ASR but select **AT3 (TR)** tags using the display settings menu to provide Air Traffic Control services.

8.3. Terminal Radar West (TMW)

8.3.1. Sector Absorption

8.3.1.1. When no other TMC sectors are open, TMW shall be responsible for the entire TMC airspace.

8.3.1.2. When MCU is not open, TML shall be responsible for covering MCU sector and its responsibilities. If TML is also not open, then TMW shall be responsible for covering MCU sector and its responsibilities.

8.3.2. Hong Kong Arrivals

8.3.2.1. TMW shall assign the appropriate STAR for traffic from SIERA. The “A” and “B” STARs are the default STARs. The “C” and “D” STARs should be issued when delay of 3 minutes / 20 NM or more is required.

8.3.2.2. Arrivals from SIKOU and IDOSI shall be transferred from TRW at MAPLE, assigned FL260 or as coordinated if cruising at a level lower than FL260.

8.3.2.3. Procedures with TML open

8.3.2.3.1. Terminal Radar Low (TML) is a position established to reduce R/T loading on TMW and to allow for more precise sequencing of arrivals via CANTO.

8.3.2.3.2. Procedures for TMW

When TML is open, FL190 is not available at SIERA. TMW shall inform Guangzhou ACC of this requirement.

TMW shall integrate arrivals from SIERA, SIKOU and IKELA into a single stream towards CANTO with 10 NM in-trail spacing and hand off to TML at FL200. TMW shall primarily achieve the required spacing by radar vectoring.

8.3.2.3.3. Procedures for TML

On receipt of hand off from TMW, TML shall absorb any required delay by holding at CANTO to achieve the flow instruction from FLC / AMAN as precisely as possible, and transfer to APP on descent to FL110 at a speed of 280 KT.

TML shall note the presence of the **MURRY Box** which facilitates the descent of aircraft to FL110 without infringing MCU airspace. As such, no coordination is required between MCU and TML for arriving aircraft. As a precondition, aircraft shall not be descended below FL130 until it can be assured that they will only descend below FL130 within the bounds of the MURRY Box.

8.3.2.4. When significant delay / holding is required, TMW may transfer aircraft to APP at a speed of not less than 230 KT subject to coordination.

8.3.3. Overflights departing Guangzhou

8.3.3.1. Overflights departing Guangzhou will be transferred from Guangzhou at FL250.

8.3.3.2. Guangzhou departures shall be transferred to TRW climbing to FL250 with a point-out to TDC.

8.3.4. Holding

8.3.4.1. Holding pattern CANTO is established as the primary hold for Hong Kong arrivals from SIKOU, IDOSI and SIERA.

8.3.4.2. Holding pattern CANTO is a right-hand pattern with inbound track 048°M, 10NM outbound leg, FL90 – FL240, maximum 250 KT IAS.

8.3.4.3. Considering various factors such as the vertical limit of TMW airspace, SIERA overflights at FL230 and the hand-off level at MURRY, the recommended holding altitude is from FL110 to FL220.

8.3.4.4. When holding is required at CANTO, TMW / FLC shall consider restricting transfer levels from Guangzhou ACC at SIERA based on the runway-in-use and the number of aircraft in the holding pattern. As a guideline, the transfer level of FL190 at SIERA should be restricted when 4 aircraft are holding at CANTO or when TML is open, while the transfer level of FL210 at SIERA should be restricted when 6 aircraft are holding at CANTO.

8.3.4.5. The number of aircraft holding at CANTO should not normally be more than 6 aircraft while TMW / TML is, at the same time, sequencing no more than 3 aircraft by radar vectoring to MURRY.

8.3.4.6. Alternative holding patterns are established at ROCCA (right-hand pattern with inbound track 074°M, 1 minute outbound leg, FL90 – FL240, maximum 250 KT IAS) and COMBI (right-hand pattern with inbound track 074°M, 10NM outbound leg, FL90 – FL240, maximum 250 KT IAS), but these are not deemed as separated from the CANTO holding pattern.

8.3.4.7. In exceptional circumstances, aircraft may be held in the published holding pattern at GAMBA (right-hand pattern with inbound track 074°M, 10NM outbound leg, FL200 – FL250, maximum 250 KT IAS). Aircraft holding at GAMBA are deemed separated from aircraft holding at COMBI/ROCCA. TMW is delegated control of the GAMBA holding pattern between FL200 – FL250 from TRW.

8.3.5. Weather Deviation / Stack Swapping Procedures

8.3.5.1. Where necessary for operational reasons, aircraft under the control of TMW may be tracked towards TMS airspace to join the BETTY STAR. TMW shall assign such aircraft the appropriate BETTY STAR, route the aircraft direct to BETTY, descend to FL210 and transfer to TDC.

8.3.5.2. Conversely, aircraft requiring to join the CANTO STAR from TMS airspace will be transferred from TDC at FL220. TMW shall integrate such aircraft with the primary CANTO arrival stream.

8.4. Terminal Departure Central (TDC)

8.4.1. Hong Kong Departures

8.4.1.1. Departures for EPKAL, IKELA and SIKOU shall route via PECAN SID to join the appropriate terminal transition route (TTR).

8.4.1.2. TDC shall climb departures to FL250 and transfer to TRW / TRV, or to their RFL if their RFL is lower than FL250.

8.4.2. Macau Arrivals

8.4.2.1. Arrivals from SABNO and DUMOL will be transferred from TRC assigned FL200 with a requirement to reach FL200 by ISBAN.

8.4.2.2. TDC shall assign descent to FL110 with a requirement to reach FL110 by 15NM before CHALI and transfer to MCU.

8.4.3. Macau Departures

8.4.3.1. Macau departures for EPKAL, IKELA and SIKOU shall route via ALLEY SID to join the appropriate TTR.

8.4.3.2. Departures for EPKAL, IKELA and SIKOU from Macau RWY 16 shall be transferred from MCU assigned FL120. Departures via MULET – SKATE from Macau RWY 16 shall be transferred from MCU assigned A090.

8.4.3.3. Macau RWY 16 eastbound departures which route via MULET – SKATE shall be transferred to TMS maintaining FL120.

8.4.3.4. TDC shall climb Macau departures on ALLEY SID to FL250 and transfer to TRW / TRV, or as coordinated if cruising at a level lower than FL250.

8.4.3.5. TTR V11 and V32 converge inside TRV airspace close to the TDC/TRV boundary, TDC shall ensure vertical separation between possible conflicting flights before transferring to TRV.

8.4.4. Overflights Landing Guangzhou

8.4.4.1. Flights from SABNO, DUMOL and IDOSI will be transferred from TRC to TDC assigned FL260 with a requirement to reach FL260 by ISBAN.

8.4.4.2. TDC shall assign descent to FL220 with a requirement to reach by SAPAX and transfer to DEH.

8.4.5. Overflights Departing Guangzhou

8.4.5.1. Flights departing from Guangzhou overflying Hong Kong FIR shall route via SIERA – MULET – SKATE / ALLEY.

8.4.5.2. Since the flight may infringe TDC airspace, TMW shall point out the flight to TDC, climb the aircraft to FL250 and transfer to TRW.

8.4.5.3. TDC shall request control of the overflight if confliction exists.

8.4.6. Overflights Landing Shenzhen

8.4.6.1. Flights from ASOBA, DOSUT and SABNO will be transferred from TRC assigned FL200 by ISBAN with 10 NM in-trail spacing. TDC shall descend the aircraft to FL110 by GOBBI and hand off to MCU with 10 NM in-trail spacing.

8.4.7. Overflights Departing Shenzhen

8.4.7.1. Flights departing Shenzhen via SIERA – ROCCA shall be handled as per Macau RWY 16 departures.

8.4.8. Weather Deviation / Stack Swapping Procedures

8.4.8.1. Aircraft requiring to join BETTY STAR from TMW airspace will be transferred from TMW at FL210 tracking direct to BETTY. TDC shall transfer such aircraft at FL210 to TMS.

8.4.8.2. Aircraft requiring to join BETTY STAR from TRW airspace will be transferred from TRW at FL260 tracking direct to BETTY from GAMBA. TDC shall descend such aircraft to FL230 and transfer to TMS.

8.4.8.3. Aircraft requiring to join CANTO STAR from TMS airspace will be transferred at FL220 tracking direct to CANTO. TDC shall transfer such aircraft at FL220 to TMW.

8.5. Terminal Radar South (TMS)

8.5.1. Sector Absorption

8.5.1.1. When TDC is not open, TMS shall be responsible for TDC sector and its responsibilities.

8.5.2. Hong Kong Arrivals

8.5.2.1. TMS shall integrate arrivals from TRZ / TRC into a single stream for handoff to APP at a speed of 280 KT at FL130.

8.5.2.2. The standard transfer levels to TMS from TRZ / TRC are from CYBER and SONNY at FL260.

8.5.2.3. When significant delay / holding is required, TMS may transfer aircraft to APP at a speed of not less than 230 KT subject to coordination.

8.5.3. Macau Departures

8.5.3.1. Macau RWY 16 eastbound departures via MULET – SKATE are transferred from TDC assigned FL120. TMS shall deconflict these aircraft against any arrivals and transfer to TDE maintaining FL120.

8.5.4. Holding

8.5.4.1. TMS uses the BETTY holding pattern, inbound track 345°M, right-hand pattern, 10 NM outbound leg, from FL90 to FL240. Since the transfer level to APP is FL130, holding below FL130 is not normally done.

8.5.4.2. In view of the system capacity and human factors considerations, the number of aircraft holding at BETTY should not normally be more than 6 aircraft while TMS is at the same time sequencing no more than 3 aircraft by radar vectoring to MANGO.

8.5.4.3. In exceptional circumstances, aircraft may be held in the published holding pattern at HOCKY (right-hand pattern with inbound track 358°M, 10NM outbound leg, FL200 – FL250, maximum 250 KT IAS). TMS is delegated control of the GAMBA holding pattern between FL200 – FL250 from TRC.

8.5.5. Weather Deviation / Stack Swapping Procedures

8.5.5.1. Where necessary for operational reasons, aircraft under the control of TMS may be tracked towards TMW airspace to join the CANTO STAR. TMS shall assign such aircraft the appropriate CANTO STAR, route the aircraft direct to CANTO, descend to FL220 and transfer to TDC.

8.5.5.2. Conversely, aircraft requiring to join the BETTY STAR from TMW airspace will be transferred from TDC at FL220. TMS shall integrate such aircraft with the primary BETTY arrival stream.

8.5.5.3. Additionally, aircraft under the control of TRW may also be tracked direct to BETTY from GAMBA. Such aircraft will be transferred from TDC at FL230. TMS shall integrate such aircraft with the primary BETTY arrival stream.

8.5.5.4. Aircraft inbound to BETTY may also be tracked towards ABBEY to join the ABBEY STAR. TMS shall track such aircraft towards the TMS/TDE boundary around SKATE on a heading agreed with TDE and transfer the aircraft to TDE at FL210 when near the boundary.

8.5.5.5. Aircraft inbound to BETTY **from TME airspace** (i.e. in the other direction) will be transferred tracking towards the TMS/TDE boundary near SKATE on a heading agreed with TDE at FL180. TMS shall track such aircraft direct to BETTY, assign the appropriate BETTY STAR and integrate the aircraft with the primary BETTY arrival stream.

8.6. Terminal Departure East (TDE)

8.6.1. General Procedures

8.6.1.1. DEP shall transfer departures from Hong Kong and Macau RWY 34 to TDE at different levels depending on the mode of operation and the runway-in-use at HKIA as well as the routing of the aircraft. The agreements have been tabulated below for reference:

HK RWY	SID	ROUTE	HANDOFF LOCATION	LEVEL	TRANSFER
RWY 07	DALOL	V642 / V652	DAKIG	↑ FL140, FL160 (note 1)	DES – TDE
	LEKEN	V601 / V611	LUBMO	↑ FL160	DEN – TDE
	DALOL	V621 / V631	LUBMO	↑ FL160	DEN – TDE
RWY 25	DALOL	V621 / V631 / V642 / V652	DAKIG	↑ FL160	DEN - TDE
	LEKEN	V601 / V611	LUBMO	↑ FL140, FL160 (note 1)	DES - TDE

Note 1: FL140 shall be used when simultaneous independent departures are in progress at HKIA, otherwise FL160 shall be used.

8.6.1.2. On receipt of hand off, TDE shall not vary the level of aircraft until the aircraft is clear of DEP airspace, unless otherwise co-ordinated.

8.6.1.3. Eastbound departures from Macau RWY 16 are handed off from TMS assigned FL120. Such aircraft may conflict with Hong Kong departures routing V642 / V652. TDE shall be responsible for resolving any potential conflicts between these aircraft.

8.6.1.4. When RWY 07 is in use and Arrivals Only, Departures Only, Mixed (ADM) mode is in operation at HKIA, potential conflicts may occur between traffic routing via V621 / V631 and V642 / V652 as centre runway and south runway SIDs converge at DALOL. While traffic will be handed off at different levels, it is the responsibility of TDE to provide adequate separation prior to handoff to the next sector.

8.6.1.5. Nevertheless, potential conflicts may arise as a result of any off-mode departures. These conflicts shall be resolved prior to handoff to the next sector.

8.6.1.6. TDE shall climb departures as per the agreements below and transfer to the appropriate sector:

DEP AIRPORT	ROUTE	HANDOFF LOCATION	LEVEL	TRANSFER
VHHH	LEKEN – V601 / V611	NUDPI	↑ FL170, FL250 (note 1)	TDE – TRE
	DALOL – V621 / V631	Sector Boundary	↑ FL250	TDE – TRE
	DALOL – V642 / V652	SKATE	↑ FL250	TDE - TRZ
ZGSZ / VMMC	ROCCA / MULET - SKATE - CONGA	Sector Boundary	↑ FL190	TDE - TRE
	NUDPI – V601 / V611	NUDPI	↑ FL170, FL250 (note 1)	TDE - TRE
	DALOL – V621 / V631	Sector Boundary	↑ FL250	TDE - TRE
	SKATE – V642 / V652	SKATE	↑ FL250	TDE - TRZ

Note 1: Aircraft with RFL below S0630 (FL207) shall be climbed to FL170, while aircraft with RFL at or above S0630 (FL207) shall be climbed to FL250.

8.6.2. Weather Deviation / Stack Swapping Procedures

8.6.2.1. Aircraft requiring to join ABBEY STAR from TMS airspace will be transferred from TMS at FL210 tracking towards the TMS/TDE boundary near SKATE on a heading agreed with TDE. TDE shall track such aircraft towards the TDE/TME boundary between LARIT and NUDPI, coordinate on a transfer level and heading with TME and transfer the aircraft to TME.

8.6.2.2. Aircraft requiring to join BETTY STAR from TME airspace will be transferred from TME at FL220 tracking towards the TME/TDE boundary between LARIT and NUDPI on a heading agreed with TDE. TDE shall track such aircraft towards the TMS/TDE boundary near SKATE on a heading agreed with TMS, descend the aircraft to FL180 and transfer the aircraft to TMS.

8.7. Terminal Radar East (TME)

8.7.1. Sector Absorption

8.7.1.1. When TDE is not open, TME shall be responsible for TDE sector and its responsibilities.

8.7.2. Arriving Aircraft

8.7.2.1. Integrate arrivals from TRK into a single stream. These arrivals will normally be metered by TRK at 10 NM in-trail before entering TME airspace. TRK shall handoff Hong Kong arrivals at FL260 at ENPET unless otherwise coordinated. Flights landing Macau and Guangzhou shall also be assigned FL260 unless otherwise coordinated.

8.7.2.2. When TRK is not able to provide 10 NM in-trail spacing due to workload and/or airspace limitations, they shall coordinate with TME on alternative arrangements for handing off traffic. TRK shall at least provide the minimum vertical separation before handing off to TME, recognising that the final establishment of spacing will come through the efforts of TME.

8.7.2.3. When significant delay / holding is required, TME may transfer aircraft to APP at a speed of not less than 230 KT subject to coordination.

8.7.3. Overflights

8.7.3.1. Macau arrivals are routed via SAMMI and NEDLE to SMT for the appropriate STAR (RWY 34 – A, RWY 16 – B). They are descending to FL260 on handoff from TRK. These arrivals are laterally segregated from Hong Kong arrivals. TME shall handoff Macau arrivals to DEH on descent to FL230 with a requirement to reach FL230 by NEDLE.

8.7.3.2. Guangzhou arrivals via SAMMI and NEDLE shall be handled as per Macau arrivals.

8.7.4. Holding

8.7.4.1. When holding is required, holding pattern ABBEY (inbound track 271°M, right-hand pattern, 10 NM outbound leg) is the default holding pattern to be used. The normal holding levels at ABBEY are between FL110 and FL220.

8.7.4.2. TME is responsible for issuing holding instructions and any other information pertinent to delay of traffic.

8.7.4.3. To cater for continuous holding, arrivals shall be given requirements to cross ENPET at FL260 and to enter the ABBEY holding pattern at a specified level, FL220 or below. Aircraft shall be assigned 250 KIAS in the holding pattern.

8.7.4.4. Holding pattern FISHA (inbound track 271°M, right-hand pattern, 10 NM outbound leg) is normally used for contingency purposes only (e.g. due to weather or when ABBEY holding pattern has reached capacity).

8.7.4.5. If it is necessary to operate holding pattern FISHA in addition to holding pattern ABBEY:

- The holding levels of the two holding patterns shall be different. Aircraft holding at FISHA shall be held at levels above those at ABBEY, i.e. between FL230 and FL250.
- Holding capacity of FISHA should be a maximum of 2 aircraft in consideration of traffic complexity and workload.
- It is not recommended to operate both holding patterns for a prolonged period of time. Alternative arrangements for traffic sequencing should be made where appropriate.
- TRK shall restrict southbound traffic via DOTMI from entering Hong Kong FIR below FL280. TRK shall ensure that northbound traffic via DOTMI does not encroach TME airspace.

8.7.4.6. In view of the system capacity and human factors considerations, the number of aircraft holding at ABBEY should not normally be more than 6 aircraft while TME is, at the same time, sequencing no more than 3 aircraft by radar vectoring to MUSEL.

8.7.5. Weather Deviation / Stack Swapping Procedures

8.7.5.1. Aircraft inbound to ABBEY may be tracked towards BETTY to join the BETTY STAR. TME shall track such aircraft towards the TME/TDE boundary between LARIT and NUDPI on a heading agreed with TDE, descend the aircraft to FL220 and transfer the aircraft to TDE.

8.7.5.2. Aircraft inbound to ABBEY **from TMS airspace** (i.e. in the other direction) will be transferred tracking towards the TME/TDE boundary between LARIT and NUDPI on a heading and transfer level agreed with TDE. TME shall track such aircraft direct to ABBEY, assign the appropriate ABBEY STAR and integrate the aircraft with the primary ABBEY arrival stream.

8.8. Macau Approach Radar (MCU)

8.8.1. Responsibilities

8.8.1.1. When Macau aerodrome ATC is not available, provide an aerodrome control service to Macau traffic.

8.8.1.2. Provide an approach radar control service to Macau traffic within its area of responsibility.

8.8.1.3. Establish an approach sequence for aircraft routing to Macau through Hong Kong airspace.

8.8.1.4. Integrate aircraft that have executed a missed approach from Macau with subsequent arrivals for Macau airport.

8.8.1.5. Control of Macau RWY 16 departures that route through Hong Kong airspace until transfer to another sector.

8.8.1.6. Control of aircraft holding at PAPA / MC513 / ATIKO / CHALI.

8.8.1.7. Integrate traffic to / from Zhuhai into the main traffic flow for Macau.

8.8.1.8. Control of Shenzhen departures that route through Hong Kong airspace via SIERA until transfer to another sector.

8.8.2. General Procedures for Macau Departures

8.8.2.1. Aircraft departing Macau RWY 16 enter MCU airspace climbing to S0120 (3900ft) for Guangzhou-direction SIDs and 4000ft for Hong Kong-direction SIDs.

8.8.2.2. MCU shall, in close coordination with TDC, initiate the integration of Macau RWY 16 departures with Hong Kong departures. MCU shall climb the aircraft as per the agreements below:

SID	ROUTE	HANDOFF LOCATION	LEVEL	TRANSFER
NUDPI	PAPA – MULET – SKATE – NUDPI	MULET	↑ FL120 (note)	MCU - TDC
CONGA	PAPA – MULET – SKATE – CONGA			
SKATE	PAPA – MULET – SKATE			
ALLEY	PAPA – MULET – ALLEY		↑ A090 (note)	
BIGRO	SANZAO	SANZAO	↑ S0150 (4900ft)	MCU - Zhuhai
NLG	MCU - LATOP	MCU	↑ S0180 (5900ft)	
IDUMA				

Note: MCU shall not climb these departures above 4000ft until PAPA unless otherwise coordinated with Zhuhai Approach.

8.8.2.3. The approval for a departure to be released from RWY 16 when RWY 34 is in use must be carefully considered, taking into account the complexity and workload involved. In any case the departure from RWY 16 should be airborne at least 8 minutes prior to the PAPA estimate of the first arrival to RWY 34.

8.8.3. Macau Departures Flow Management

8.8.3.1. Macau Tower shall sequence Macau departures 3 minutes apart regardless of RWY configuration unless otherwise coordinated. Requests to reduce the interval between successive Macau departures may only be approved after consulting with DES (Macau RWY 34) or MCU (Macau RWY 16) and taking into account current and expected traffic levels, complexity and workload in area control sectors. On RWY 34, Macau Tower shall also obtain approval for Zhuhai for the interval reduction.

8.8.4. General Procedures for Macau Arrivals

8.8.4.1. The following table lists the handoff agreements to MCU:

MACAU RWY	STAR	ROUTE	HANDOFF LOCATION	LEVEL	TRANSFER
RWY 34	SMT	SMT – MC601 – HAZEL	HAZEL	↓ FL110	DEH – MCU
	CHALI	ALDOM – ISBAN – ROBIN - CHALI	15nm before CHALI	↓ FL110	TDC - MCU
		DASON – COTON - CHALI	COTON	↓ FL120	TRW - MCU
	NLG	NLG – LATOP - MCU	MCU	↓ A070	Zhuhai - MCU
	CON				
	POU				
	BIGRO	BIGRO – GURIN – GAOLAN - ROMEO	ROMEO	↓ A060	
RWY 16	SMT	SMT – MC601 – HAZEL	HAZEL	↓ FL110	DEH – MCU
	CHALI	ALDOM – ISBAN – ROBIN – CHALI	15nm before CHALI	↓ FL110	TDC – MCU
		DASON – COTON - CHALI	COTON	↓ FL120	TRW - MCU

8.8.4.2. If a Macau arrival on the SMT STAR has deviated off the STAR due to weather or other operational reasons, it should be cleared to track direct HAZEL/PAPA for RWY 34 or HAZEL/INDUS for RWY 16 and resume the appropriate STAR/Approach procedures. Alternatively, radar vectors should be provided.

8.8.4.3. Controllers should be mindful of any potential conflicts between Macau arrivals that may be kept high passing HAZEL and Shenzhen departures transiting Hong Kong FIR via SIERA at FL120.

8.8.5. Approach Sequence

8.8.5.1. When Macau RWY 34 is in use, MCU shall normally radar vector arrivals for the **ILS Z** approach to ensure an expeditious approach sequence. Arrivals will be sequenced to a minimum of 10 NM in trail on final approach and transferred to Macau Tower when established on the LOC. Alternatively, it is acceptable to issue approach clearance directly from the appropriate IAF/IF (MCU/MC611/HAZEL/ROMEO) during low traffic periods. Should this be done, the QNH should be passed along with the approach clearance if the aircraft is approaching from HAZEL.

8.8.5.2. Further to the above, aircraft inbound from HAZEL may be provided clearance for a pilot-initiated early left turn to join final with the phraseology “early left turn approved”.

8.8.5.3. When Macau RWY 16 is in use, MCU shall sequence arrivals at least 20 NM in trail and transfer them to Zhuhai at INDUS. The standard transfer altitude is S0270 (8900ft).

8.8.6. Instrument Approaches

8.8.6.1. The Instrument Approach Procedures available at Macau airport are tabulated below. Preferred IAPs are shown in **bold**.

RUNWAY	INSTRUMENT APPROACH PROCEDURE
RWY 16	LOC/DME (X, Y, **Z**), RNP (Y, Z)
RWY 34	ILS (X, Y, **Z**), RNP, VOR/DME

8.8.7. Visual Approaches

8.8.7.1. MCU may clear aircraft to execute visual approaches to RWY 34 subject to the following conditions:

- The reported cloud ceiling is at or above the initial approach altitude of 3000ft;
- The pilot reports that the meteorological conditions are such that a visual approach and landing can be made;
- Separation, other than visual separation, is provided from all other aircraft except with the preceding arriving traffic once the pilot reports it in sight and is instructed to maintain own separation;
- Macau Tower is notified;
- Aircraft is released to Macau Tower at 3000ft or above, unless otherwise coordinated with Macau Tower.

8.8.7.2. When Macau RWY 16 is in use aircraft may request visual circling approaches to RWY 16 following an instrument approach to RWY 34. The weather minima for this approach is cloud base 1500ft and visibility of 6KM. MCU may approve such requests provided that:

- MCU coordinates the request with Macau Tower (who shall in turn coordinate with Zhuhai). MCU, Macau Tower and Zhuhai must all approve the manoeuvre.
- There are no other IFR movements within 20 minutes of the ETA.

8.8.8. Macau RWY 16 Missed Approaches

8.8.8.1. Aircraft that execute a missed approach from Macau RWY 16 re-enter Hong Kong airspace climbing to 4000ft. Macau Tower shall transfer these aircraft to MCU as soon as practicable.

8.8.8.2. In the event of successive missed approaches, it is Macau Tower's responsibility to restrict the second aircraft to 3000ft until a higher altitude has been coordinated with MCU.

8.8.8.3. MCU shall climb the traffic to 5000ft and vector it to INDUS maintaining S0180 (5900ft). Once the aircraft is clear of other traffic within the sector, they shall be transferred to Zhuhai.

8.8.9. Macau RWY 34 Missed Approaches

8.8.9.1. Aircraft that execute a missed approach from Macau RWY 34 enter DES airspace climbing to 9000ft. It is the responsibility of DES to coordinate with MCU and FAD (RWY 07) or DEN (RWY 25) regarding the routing of the aircraft.

8.8.10. Holding

8.8.10.1. When necessary, MCU may hold aircraft at ATIKO between 5000ft and FL110 (inbound track 036°M, right-hand pattern, 1 minute outbound leg).

8.8.10.2. The use of the CHALI holding pattern (inbound track 074°M, left-hand pattern, 1 minute outbound leg) is discouraged as the holding pattern is only available from 9000ft. Should it be necessary to use the CHALI holding pattern, alternative arrangements shall be made with TDC / TRW regarding any potential CHALI arrivals.

8.8.10.3. The PAPA holding pattern (inbound track 344°M, left-hand pattern, 1 minute outbound leg) which is available from 3000ft may be used for short-term holding when RWY 34 is in use.

8.8.10.4. When RWY 16 is in use, the MC513 holding pattern (inbound track 328°M, left-hand pattern, 1 minute outbound leg) may be used. MCU shall coordinate with Zhuhai to ascertain whether or not holding is required.

8.8.11. Macau Runway Change Procedures

8.8.11.1. Macau Tower will advise MCU whenever there is a runway change. MCU shall then advise other sectors as appropriate.

8.8.12. Traffic via SIERA

8.8.12.1. Hong Kong arrivals from Shenzhen may be routed on a SIERA STAR at FL120 and be transferred to TMW. Under these circumstances, TMW should coordinate with MCU and integrate this traffic into the main stream of high-level SIERA arrivals.

8.8.12.2. Flights departing Shenzhen via SIERA overflying Hong Kong FIR will route via MULET and be handled as per Macau RWY 16 departures.

8.8.13. Overflights Landing Shenzhen

8.8.13.1. Flights from SIKOU and IKELA will route via DASON – COTON – LANDA. They will be transferred from TRW assigned FL120 by COTON with 10 NM in-trail spacing.

8.8.13.2. MCU shall integrate traffic from COTON and GOBBI and transfer to Zhuhai at FL110 with 20 NM in-trail spacing.

8.8.14. Oil Rig Support Helicopters

8.8.14.1. Outbound IFR helicopters on track D shall route via ZUH VOR – ROMEO – DELTA. Zhuhai will transfer helicopters to MCU at ROMEO maintaining 4000ft (or 6000ft subject to prior coordination between Hong Kong and Zhuhai ATC due to other IFR flights operating to/from Hong Kong and Macau). MCU shall transfer the helicopters to CFIS upon leaving controlled airspace.

8.8.14.2. Inbound IFR helicopters are transferred from CFIS prior to entering controlled airspace. Such helicopters will track direct to DELTA and then route ROMEO – ZUH VOR. MCU shall transfer helicopters to Zhuhai at ROMEO maintaining 5000ft.

9. GLOSSARY OF TERMS

ABBREVIATION	DEFINITION
APP	Approach
DEP	Departure
TMC	Terminal Radar Control
TR	Area Radar Control
AMC	Air Movements Control
TRAM	Tactical Runway Allocations Mode
AMAN	Arrivals Manager
FLC	Flow Control
ADM	Arrivals Only, Departures Only, Mixed
WTC	Wake Turbulence Category

RECORD OF REVISION

DATE	REV.	REVISION CONTENT	APPROVAL
31 JUL 2018	1	Updated Diagrams Updated Overall Content	B. BROWN
17 JUN 2020	2	Updated sector diagrams in section 5.1 Updated frequencies in section 5.2.1 Added section 5.3.2 Added section 6.3 Updated section 7.1.3 Added section 7.3 Added section 8.4 Updated appendix A Added appendix C Added HKVACC-SOP004 Annex I	J. CHENG
1 DEC 2021	3	Updated VHHH runway designators Updated section 8.2.3	J. CHENG
09 SEP 2023	4	Removed appendix A, B & C Added section regarding handoff releases Rewritten STAR and approach clearance procedures Added section designating primary terminal radar sector Added descriptions for Terminal Radar & Macau Radar Added Terminal Radar South 1	T. SIU
03 APR 2024	5	Updated Section 5.8.1 (Oil Rig Track D) Updated Section 7.1.3 (Guidance for RAMEN/RUMSY Contingency SIDs) Updated Section 8.1.3 (Expected approach not required if ILS) Updated Position Names of VMMC_APP, VHHH_S1_APP and VHHH_F_APP to match reality Updated Aerodrome Position Names to match reality Updated primary Terminal Radar position to VHHH_W_APP Updated Section 7.1.1 (Include RAMEN/RUMSY SIDs) Updated Section 8.1.1 (Move responsibility of issuing STARs to Area Radar) Added Section 8.2.7 (ILS 25R RNAV Transition Phraseology) Split Sector Identifiers and Sector Codes	T. SIU

23 APR 2024	6	Updated Section 5.9.1 Updated Section 5.3.4.2	T. SIU
09 JUN 2024	7	Added Section 6.1.5 (Separation Minima) Updated Section 5.3.4.2 for clarification Updated Section 8.1.5 for clarification Updated RNAV Transition Phraseology	T. SIU
05 OCT 2024	8	Renamed Terminal Radar South Departures to Terminal Departures Central Added bandbox procedure for Terminal Radar West	T. SIU
28 NOV 2024	9	Updated Frequency Table Updated Section 5.3.4 Updated Section 5.8.1 Updated Section 6.1.4 Updated Section 8.1.10 Updated several waypoint names and SID/STAR identifiers for 3RS Updated TMA to APP/DEP/TMC	T. SIU
07 DEC 2024	10	Updated Section 7.1.10 Updated Section 8.1.12 Added Section 8.1.13	T. SIU
26 JAN 2025	11	Updated Section 5.3.4.1	T. SIU
16 OCT 2025	12	Complete rewrite for readability and organisation Updated various procedures Added TML sector	T. SIU
27 NOV 2025	13	Updated TDE handoff levels Updated MCU – TMS – TDC handoff level for Shenzhen departures Added references to TRZ where appropriate	T. SIU