# IVAO XZ division

# Air Traffic Control Procedures

v2.1

**INTRODUCTION**

Any member wanting to work as an ATC in XZ division's airspace **must know** the multi-country division's ATC procedures applicable to the type of ATC position being manned.

The Southern Africa (XZ) division is a multi-country division consisting of 7 countries, namely Botswana, Lesotho, Mozambique, Namibia, South Africa, Swaziland and Zimbabwe.

Here after referred to as only XZ.

For explanations of definitions or acronyms used in this document, refer to the XZ website -> Resources -> VAIP -> GEN2.2 and GEN2.3
This document applies to all ATC positions and disciplines across the division; namely DEL, GND, TWR, APP or $ACC_1$. Where a controller is providing the function of more than 1 of these disciplines, the ATC shall provide the services and comply with the procedures for all those positions "below" his/her highest sector.
Where an ATC position is not manned, but an ATC with a higher position is manned, that ATC is responsible for the unmanned position below it.
ATC position priority from high to low:

- ACC
- APP
- TWR
- GND
- DEL

  E.g. If FACT_APP is manned but not FACT_TWR, FACT_GND or FACT_DEL, then FACT_APP will provide ATS for those positions as well. FACT_APP however is not responsible the FACA_W_CTR sector "above it", if this is unmanned.

ACC controllers with a high traffic load may use good judgement and reduce services provided at controlled aerodromes starting with the removal of DEL and GND services, then if needed TWR services.
ACC controllers will however always provide departing IFR aircraft from a controlled aerodrome with an IFR departure clearance.

*Note 1:ACC is an Area Control Centre, and refers to an Area controller. CTR (Center) is another name for an Area controller used in Ivac1. Not to be confused with the actual definition of CTR, a Control Zone, a type of airspace around an aerodrome.*

## 1. RESPONSIBILITIES

**Aerodrome / Airspace**

1.1. DEL provides departure clearances to departing IFR aircraft.

1.2. GND is responsible for all aircraft moving on the taxiways and non-active runway(s).

1.3. TWR, during VMC, is responsible for the active runway(s) and the CTR around the airfield.

1.4. During IMC, the active runway(s) and CTR the responsibility is delegated to APP, unless otherwise coordinated.

*Note: TWR does NOT provide any radar service. The IVAC radar is used as a guide to where traffic is, and cannot be used as a separation tool.*

1.5. APP is responsible for all the airspace within the lateral limits of the applicable TMA/CTA.

1.5.1. Controlled airspace, Class C, lower limit(s) as per TMA/CTA chart up to FL145.

1.5.2. All airspace below and within the lateral limits of the applicable TMA is uncontrolled airspace, Class G.

*Note: The upper limit of the CTR and the adjacent lower limit of the TMA is a shared altitude between TWR and APP and shall NOT be used without coordination.*

*Note: The above vertical limits mean Approach in some cases is responsible for a portion of the CTA that is above that TMA.*

1.6. ACC is responsible for all the airspace of the applicable FIR (sector or sectors), GND to FL640, excluding all TMAs, CTRs and ATZs that falls within that ACC's sector lateral boundaries and also excludes subsequent uncontrolled airspaces below such TMAs.

1.6.1. Uncontrolled airspace is surface to FL145.

1.6.2. All airspace FL145 to FL460 is Class A airspace.

1.6.3. Above FL460 to FL650 is Class G airspace.

**Duties**

1.7. DEL will provide departing aircraft with the following information:

1.7.1. Provide aerodrome & weather information to all flights;

1.7.2. Issue squawk codes to all flights;

1.7.3. Issue departure clearances to IFR flights;

1.7.3.1. Departure clearances are obtained from the APP controller; or

1.7.3.2. If the TMA has SIDs, then ensure the FPL route starts at 1 of these TMA exit points and issue the appropriate SID without having to request the clearance from APP; or

1.7.3.3. If the pilot cannot comply with a SID, contact APP for an alternate clearance.

1.8. GND shall provide IFR flights with the following information:

1.8.1. The current UTC time (only minutes of the hour required) on start-up, and

1.8.2. The QNH shall be provided, no later than when the aircraft reaches the runway.

1.9. TWR shall issue VFR flights with after departure instructions.

1.10. TWR shall ensure the required spacing between all (VFR, IFR & SVFR) departures as per **Aviation Handbook->3 Aerodrome Control -> 3.5 Departure Separation**, unless otherwise coordinated with APP.

*Note: Ensure aircraft are squawking mode C when entering the active runway for departure and before issuing a take-off clearance.*

1.11. Both TWR and APP must continuously monitor surface and final approach weather conditions that could require a runway change.

1.12. TWR, when providing surface wind for departing & arriving aircraft, shall add the magnetic variation to the METARs surface wind. See Appendix B.

1.13. All Radar controllers (APP/ACC):

1.13.1. The 1st radar controller that has contact with a flight shall (radar) identify and check aircraft transponder's mode C (altitude).

1.13.2. All transfers of communication and control of such flight between radar controllers within XZ airspace shall include the transfer of radar identity.

1.13.3. Transfer of communication shall happen before the airspace boundary.

1.13.4. Transfer of control for level changes and speed adjustments shall automatically take place following transfer of communications. The accepting sector shall be responsible for any change in longitudinal separation resulting from any speed adjustments.

1.13.5. Transfer of control of a flight happens at the lateral airspace boundary or TCP.

1.13.6. ATC shall ensure terrain clearance for all IFR flights.

1.13.7. ATC shall not turn an aircraft from its planned route while in another ATC's airspace without coordination.

**ATIS**

1.14. All controllers shall continuously keep their ATIS up to date during their shift.

1.15. Runway-in-use, Transition Level (Aerodrome ATC & APP only) and the state of CTRs (VMC or IMC) must be updated as required.

1.16. In the case of parallel runways, Aerodrome ATC and APP will indicate the runway-in-use for arriving and the runway-in-use for departing traffic.

1.17. ACC only needs to indicate the parallel runways designator in the 'Remarks' field.
*Note: "FAOR 03 VMC – FALA 06 VMC"*

1.18. The 'Remarks' field must be used to indicate the state of the CTR (VMC or IMC).

1.19. If there is only 1 CTR that falls within or below your area of responsibility then just indicating that CTR's state.
*Note "Zone VMC" or "Zone IMC" or "CTR VMC" or "CTR IMC"*

1.20. In cases where a CTR and an ATZ have a common airspace boundary, the following will apply:

1.20.1. If the CTR = IMC, and the ATZ = VMC, then ATZ must be declared IMC.

1.20.2. If the CTR = VMC, and the ATZ = IMC, then ATZ stays IMC and CTR stays VMC.

1.21. If the radar controller has multiple CTRs that falls below his/her area of responsibility then indicate both the runway(s)-in-use and the state of that CTR
*E.g. "FAOR 03 VMC — FALA 06 VMC –FALE 06 IMC — FABL 02 VMC"*

## 2. COORDINATION

2.1. Coordination between controllers shall be done via IVAC Private Chat (text) or Intercom (voice) or the aircraft label (Cleared WP field) where possible.

2.2. The IVAC ATC channel is ONLY to be used for information that must be passed to ALL ATCs within PVD range or general chat.

2.3. GND shall request runway intersection departures from TWR.

2.4. GND shall advise TWR when IFR aircraft is taxiing for departure.
*E.g. Taxi SAA300 CAW400*

*2.5.* TWR shall advise APP when IFR aircraft is taxiing for departure.

*E.g. Taxi SAA300 CAW400*

*Note: If more than one IFR aircraft is taxiing for departure, indicate the order (1st to last)*

2.6. TWR shall advise APP immediately when MET conditions goes below the VMC minima, and thus requires a change to IMC.

2.7. APP shall advise ACC of any changes to the runway-in-use and MET conditions.

*Note: See Aviation Handbook 3.7*

2.8. APP, in coordination with TWR, shall decide when the runway change occurs.

2.8.1. Coordinate between which departing and arriving flights the runway change will occur.

2.8.2. TWR must coordinate with GND w.r.t. departing traffic.

2.9. APP shall advise all neighbouring APP and ACC units, including other TWR units within the TMA about the runway change via the ATC channel.

2.9.1. APP shall coordinate with ACC w.r.t which arriving flights are for the current runway and which flights for the new runway.

**Arriving Flights**

2.10. APP shall advise TWR of IFR flights flying a visual approach.

2.11. ACC shall provide all flights (VFR & IFR) with an inbound or joining clearance into a TMA.

2.11.1. This clearance shall be provided at least 10 minutes before the flight enters such airspace.

2.12. ACC shall provide an inbound clearance to IFR flights to an aerodrome as follows:

2.12.1. on the applicable STAR as per the TMA entry points; or

2.12.2. IFR flights that cannot comply with a STAR or there are no published STARs, the flight shall be cleared via a TMA entry point (if such exist), then direct to aerodrome navigational aid (VOR/NDB). This must be coordinated with APP.

2.12.3. In any other case an inbound or joining clearance must be obtained from APP.

*Note: If ACC is not open, APP shall establish communication with such flight at least 10 minutes before entering his/her airspace and provide such clearance via IVAC private chat.*

2.13. Any changes to an inbound/joining clearance will be passed on to the flight as soon as possible.

2.14. ACC shall manage the flow of traffic into a TMA by sequencing/spacing traffic.

2.15. Flights shall be transferred at least 10nm in-trail, constant or increasing.

2.16. When necessary, ACC will hold IFR traffic or when requested by APP due e.g. congestion or an emergency.

2.17. APP may also request to increase the standard spacing of 10nm when deemed necessary.

**Departing Flights**

This section has been intentionally left empty.

**En-route**

2.18. ACC shall pass changes in Flight Level and/or the TCP of a flight to the accepting controller.

2.19. If a change in the current flight plan is requested by an aircraft within 10 minutes of the TCP, such clearance shall be withheld until the change has been agreed upon with the accepting controller.

*Note: Changes to the actual filed flight plan must be made by pilot or ATC (**in coordination with pilot**).*

## 3. TRANSFER

3.1. Transfer of communication shall take place before the TCP, only after having successfully completed an IVAC label handoff to the receiving sector,

3.1.1. Except for a communication transfer from TWR to APP for a departing flight. Thus TWR can transfer communication of a departing flight to APP without APP accepting the IVAC label.

3.2. Transfer of aircraft identity, control for level changes and speed adjustments shall automatically take place following the IVAC label handoff (See 3.1). The accepting controller shall be responsible for any change in in-trail separation resulting from any speed adjustments.

3.3. Transfer of control for initiation of turns may only take place when the flight is within the lateral limits and has reached the first IFR level within the accepting controller's airspace.

3.4. DEL shall transfer IFR flights to GND once they have been issued a departure clearance.

*Note: Use the R/T "Contact GND on xxx.xxx when ready for push and start."*

3.5. DEL shall transfer any VFR flights to GND for start-up and/or taxi after issuing a squawk code.

3.6. GND shall transfer flights to TWR, while on taxi, clean of all conflicting traffic under the control of the transferring ATC.

*Note: Preferably before reaching the holding point to the departing runway.*

3.7. TWR shall transfer flights to APP once airborne and before passing 2000ft AGL.

3.8. TWR shall transfer flights to GND once the active runway is confirmed vacated.

3.9. APP shall transfer flights to ACC according to the following:

3.9.1. When at least 10nm in trail separation exists and is constant or increasing;

3.9.2. The aircraft is clear of all conflicting traffic under the control of the transferring ATC;

3.9.3. Aircraft has been cleared to climb to FL150 or a lower cruise level and is routing to the TCP.

3.10. APP shall transfer flights to TWR as follows:

3.10.1. When established on the ILS, or

3.10.2. When executing a visual approach, before the lateral limits of the CTR, or

3.10.3. When below the TMA, at least 5min of flight time before reaching the CTR boundary.

3.11. ACC shall transfer flights to APP as follows:

3.11.1. When at least 10nm in trail separation exists and is constant or increasing;

3.11.2. The aircraft is clear of all conflicting traffic under the control of the transferring ATC;
3.11.3. The aircraft has been cleared to descend to FL160;
3.11.4. The aircraft is within 20nm from the TMA boundary and no later than the TMA boundary itself, unless otherwise coordinated.

## 4. RADAR TAGS

4.1. All ATC working within the division's airspace should make use of radar tags (Cleared FL, Cleared WP & Cleared SP) where necessary to coordinate with an adjacent ATC.
4.2. This will reduce your text/voice coordination with an adjacent ATC.
4.3. The Cleared FL field will always be kept up-to-date by each controller as part of (silent) coordination to the receiving controller.
4.4. The Cleared WP field is limited to only 6 characters. So use it sparingly.
4.5. Although the Cleared WP field is intended for coordination with another ATC, nothing prevents you for personal reminders, but you have to clear the field of that personal info before you do a radar label transfer.
4.6. Use the Cleared SP field if preferred to indicate speed restrictions.
4.7. See **Appendix A** for regularly used radar tags.

## 5. Radar Vectoring Areas (RVA)

5.1. RVA maps have been created in the sector files and can be found under STAR. Maps names start with RVA_xxxx.
5.2. The legend for each RVA map is published on the XZ website and links to it can be found under the ATC Position pages (for the respective position).
5.3. RVA maps provide the Radar controller with the lowest altitudes or FLs that the ATC can descend aircraft in a particular part of the TMA to ensure aircraft remains clear of terrain.
5.4. Some TMAs does not have RVA maps, in such cases the lower limits of that TMA will ensure sufficient clearance from terrain.

**APPENDIX A:**

Radar label tags:

| | | |
|---|---|---|
| **Cleared FL** | | |
| | **ACC/APP** | |
| | | -Change this field as FL or altitude clearances are issued. |
| | | -'CLEAR' this field when an aircraft has been cleared for an approach or has unrestricted descend into uncontrolled airspace. |
| | | |
| | **DEL/GND/TWR** | |
| | | For departing flights, select the altitude/FL as per cleared SID or non-standard departure. |
| | | |
| **Cleared WP** | | |
| | **ACC/APP** | Displays a flight is on a heading/track or sent direct to a navigational aid.<br>H010 = Heading 010 degrees<br>T190 = Track 190 degrees<br>ERDAS = Direct to ERDAS<br>RH = Runway heading<br>NS = No Speed Restrictions<br>V = When IFR flight executing a visual approach (for TWR to see) |
| | | Indicate speed assignments, otherwise use the Cleared SP field.<br>25+ = IAS 250knots or greater<br>28- = IAS 280knots or less<br>30 = IAS 300knots maintain<br>M74+ = Mach .74 or greater |
| | | |
| | **TWR** | |
| | | LDW = Left downwind<br>RDW = Right Downwind |
| | | |
| | **DEL** | |
| | | Enter the heading or RH for the non-standard departure clearance as issued to the departing flight. |

**APPENDIX B:**

The magnetic variation for each FIR has been averaged to make it easier to calculate surface wind for an aerodrome.

| | |
|---|---|
| FACA / FAJA | +20deg |
| FBGR | +10deg |
| FQBE<br>Excl. aerodromes below Maputo TMA | +10deg<br>+20deg |
| FVHF | +10deg |
| FYWH | +10deg |