APPENDIX G

INTERNATIONAL CIVIL AVIATION ORGANIZATION

AFI MET BULLETINS EXCHANGE (AMBEX) HANDBOOK

Seventh Edition – Amendment 4

December - 2014

Prepared by the ICAO ESAF & WACAF Offices
And published under the authority of the Secretary General

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of ICAO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Record of amendments

Inscription des amendements

AMBEX HANDBOOK - 7TH EDITION -

MANUEL AMBEX - 7EME EDITION -

Amendment No. Amendement No.	Dated En date du	In force from En vigueur à partir du	Entered by Inscrit par
1	15/03/2010	01/04/2010	RO/MET
2	01/07/2011	15/08/2011	MET/SG Secretariat
3	15/07/2013	15/10/2013	Core Team on AMBEX Scheme
4			Secretariet

TABLE OF CONTENTS

Page

ABBREVIATIONS AND ACCRONYMES

ADMIN	Administrative
AFI	Africa and Indian Ocean region of ICAO
AFMAG	AFI MET Advisory Group
AFS	Aeronautical Fixed Service
AFTN	Aeronautical fixed telecommunication network
AIREP	Air-report
AMBEX	AFI MET Bulletins Exchange (System)
AMD	Amend/Amended
AMHS	ATS Message Handling System
ANP	Air Navigation Plan
APIRG	AFI Planing and Implementation regional Group
ASIA/PAC	Asia and Pacific Region of ICAO
BCC	Bulletin Compilation Centre
BRDO	Banque Régionale des Données OPMET
COM	Communications
ESAF	East and South African (Office)
EUR	Europe region of ICAO
FASID	Facilities and Services Implementation Document
ICAO	International Civil Aviation Organization
ICD	Interface Control Document
IROG	Inter-regional OPMET gateway
MET	Meteorology
MET/SG	MET Sub-group
METAR	Aerodrome routine meteorological report
MID	Middle East region of ICAO
NAM	North American region of ICAO
NOC	National OPMET Centre
ODREP	OPMET Data Regional Exchange Points
OMM	Organisation Météorologique Mondiale
OPMET	Operational meteorological *(information)*
RODB	Regional OPMET Data Bank
SADIS	Satellite Distribution of Aeronautical Information
SAM	South African (Office)
SARP	Standards and Recommended Practices [ICAO]
SIGMET	Information concerning en-route weather phenomena which may affect the safety of aircraft operation
SPECI	Aerodrome special meteorological report *(in meteorological code)*
TAF	Aerodrome forecast
TCA	Tropical Cyuclone Advisory
TCAC	TCA Centre
VAA	Volcanic Ash Advisory
VAAC	VAA Centre
WACAF	Western and Central African (Office) of ICAO
WIFS	WAFS Internet File Services
WMO	World Meteorological organization

1. INTRODUCTION

1.1 The Africa- Indian (AFI) Meteorological Bulletin Exchange (AMBEX) scheme was established by the **AF**I Planning and Implementation Regional Group (APIRG) in 1986. The scheme became operational in 1986 and has since then been successfully serving the ICAO AFI Region in the exchange of the required OPMET information.

Note: AFI Meteorological Advisory Group (AFMAG) was created by the LIM AFI (COM/MET/RAC) RAN Meeting in Lome April 1988 and established by APIRG/6 Meeting in November 1989.AFMAG was replaced by AFI Meteorology Sub Group (MET/SG) at APIRG/11 Nairobi 1998. AMBEX was implemented starting on 29 August 1986.

1.2 AMBEX scheme was intended initially only for TAF exchanges. AIREPs and METAR were added to the scheme at a later stage and SIGMET, Volcanic Ash Advisory (VAA) and tropical Cyclone (TCA) has been added in this edition. The operation of the AMBEX scheme included exchange of OPMET bulletins between the originating tributary offices and the bulletin compiling centres, which, according to their functions and responsibilities, were classified as METAR Collection Centres, TAF Collection Centres and AIREP Collection Centre. The operational exchange has been carried out according to agreed transmission schedules; the bulletin contents were specified in the AMBEX Handbook.

1.3 The procedures described hereunder are based to a significant degree on corresponding procedures in use in the Regional OPMET Bulletin Exchange (AMBEX) Scheme (AFI). Where some variations or adaptations of the basic principles appear more efficient, AMBEX Provider States are strongly requested to submit to the AFI OPMET Management Task Force (AFI MTF) any changes that are considered desirable for the enhancement of the efficiency of the scheme. AMBEX centre authorities are strongly requested to suggest to the Secretary of the MET/SG any local changes that are considered desirable for the enhancement of the efficiency of the scheme.

1.4 Based on communications (COM) facilities of very limited capacity in the early seventies, the AMBEX scheme was strictly planned to accommodate only those OPMET exchanges considered vital for the flight operations. Over the years, the COM facilities have been improving considerably and the AMBEX scheme has been developed accordingly.

1.5 Recently, it has been identified that significant changes in the scheme were needed in order to make it compatible with the existing COM environment and satisfy the evolving user requirements. In view of this, APIRG adopted conclusions that called for further development of the AMBEX scheme according to the new operational requirements.

1.6 The AMBEX Handbook is the main guidance material providing detail on the procedures for OPMET exchange under the AMBEX scheme. The Handbook defines the responsibilities of the AMBEX centres and the procedures to be followed. It defines also the content and format of the AMBEX bulletins.

1.7 The AMBEX Handbook is published and kept up-to-date by the ICAO ESAF and WACAF Offices.

1.8 Amendments of the AMBEX Handbook

1.8.1 Any proposals for amendments to the AMBEX Handbook, which States or international organizations concerned consider necessary, due to changes in operational requirements for the Ambex scheme or to any other developments, should be forwarded for consideration by the ICAO Regional Offices of Dakar, Senegal and Nairobi, Kenya as the case may be.

1.8.2 Major changes in the AMBEX Handbook should lead to the issuance of a new edition number and minors changes of the Guide should be referred as an "Amendment" or "Corrigenda" without any change to the edition number.

1.8.3 Majors changes are any changes initiated through provisions in ICAO Annexes standards related to the AMBEX scheme except editorial changes. Major changes should be approved through Decisions of an AFI Planning and Implementation Regional Group (APIRG) meeting.

1.8.4 Amendment" or "Corrigenda" are minor editorials changes to be approved only by the AFI Infrastructure and Information Management Sub-Group (IIM/SG) meetings.

2. AMBEX SCHEME - GENERAL

2.1 Objective

2.1.1 The main purpose of the AFI Meteorological Bulletins Exchange (AMBEX) Scheme is to:

ensure the most efficient and economical exchange of operational meteorological (OPMET) information within the AFI Region as well as with the other ICAO regions to meet the requirements of users of OPMET information, and

ensure the implementation of the OPMET-related SARPs in Annex 3 and Annex 10, and the relevant provisions of the ICAO Air Navigation Plan (ANP) for the AFI Region in a highly efficient and standardized way.

2.2 Structure

2.2.1 The above objective is achieved by implementing a number of AMBEX collecting and disseminating centres (AMBEX centres), Regional OPMET data banks (RODBs)*, and inter-regional OPMET gateways (IROGs). All these operational units form the **AMBEX scheme.** In order to ensure seamless global exchange of the required OPMET information, the AMBEX Scheme should be developed in compliance with similar structures in the other ICAO regions, as well as with the aeronautical fixed system (AFS) satellite distribution systems used to disseminate OPMET data.

** Note: The AFI OPMET Regional Data Banks are located in Dakar, Senegal and Pretoria, South Africa.*

2.3 Products

2.3.1 The AMBEX scheme prepares and delivers to the aviation users the required OPMET information in the form of **bulletins.** The scheme should handle all types of OPMET information in alphanumeric bulletin form and should provide facilities and services for scheduled and non-scheduled delivery of OPMET information to users.

2.4 Communications -General

2.4.1 Use of AFS Components

According to Annex 3, 11.2," telecommunications facilities used for the exchange of operational meteorological information should be the aeronautical fixed service". The use the AFS for the OPMET exchange encompass two components:

Use of terrestrial AFTN/AMHS circuits; and

Use of satellite distribution systems-SADIS.

2.4.2 Use of the AFTN/AMHS

2.4.2.1 In the AMBEX scheme AFTN/AMHS circuits are used for collection of the OPMET messages by the AMBEX centres and for regional and inter-regional exchanges of OPMET bulletins. The access to the regional OPMET data banks (request-reply service provided by the RODBs) is also provided through the AFTN/AMHS.

2.4.2.2 OPMET bulletins transmitted via the AFTN/AMHS shall be encapsulated in the text part of the AFTN/AMHS message format (Annex 3, Appendix 10, 2.1.4).

2.4.2.3 Transit times of the AFTN/AMHS messages and OPMET bulletins are specified in Annex 3, Appendix 10, 1.1.

2.4.2.4 OPMET bulletins via AFTN/AMHS should use the following **priority indicators:**
FF: SIGMET, AIREP SPECIAL, VAA,TCA and amended TAF (cf. Annex 10 Vol II, 4.4.1.1.3)
GG: TAF, METAR and SPECI (cf. Annex 10 VolI, 4.4.1.1.4)

2.4.2.5 Filing times of the OPMET bulletins should comply with Annex 3, Appendix 10, 2.1.2

2.4.3 Use of the Satellite Distribution System for aeronautical information (SADIS-operated by the UK)

2.4.3.1 SADIS satellite broadcast is used by the authorized users in the States for receiving global OPMET Data.

2.4.3.2 FASID Table MET 7 of the AFI regional plans contains a list of authorized users for the SADIS broadcast.

2.5 Use of the Internet

2.5.1 Internet may be used to the dedicated internationally agreed circuits for exchange of meteorological data. An internet based secure FTP service to SADIS has been operational since 2010.

2.5.2 Both RODBs provide internet based facilities for retrieval of OPMET information.

2.6 Management

2.6.1 Monitoring of the OPMET exchange under the AMBEX Scheme, planning for improvements and preparation of proposals for any changes that may be necessary, are carried by the APIRG. In order to achieve these tasks, the AMBEX implementation status and planning is part of the agenda of the AFI MET Sub-group MET/SG.

Note: When necessary, contributory bodies may be established by APIRG or the MET Sub-group to deal with OPMET specific issues. The AFI OPMET Management Task Force, established by APIRG/16 is currently tasked to deal with all OPMET related issues in the AFI Region

2.6.2 Any proposals for amendments to the AMBEX Scheme, which States or international organizations concerned consider it necessary, due to changes in operational requirements for OPMET data

or to developments of the AFS, should be forwarded for consideration by the ICAO Regional Offices of Dakar, Senegal and Nairobi, Kenya as the case may be.

2.7 Documentation

2.7.1 The AMBEX Handbook is the main guidance material related to the AMBEX Scheme. It should be kept up-to-date by the ICAO Regional offices referred to above, coordinated by the Secretary of the OPMET Task Force in close coordination with the Secretary of the MET Sub-group.

2.7.2 The AFI OPMET Data Banks Interface Control Document (ICD) is a supplementary document which provides users with guidance on the interrogation procedures and the content of the RODBs.

3. DEFINITIONS AND SYMBOLS

3.1 Within the AMBEX Scheme, the following definitions and symbols are used:

i) AMBEX: AFI MET Bulletins Exchange (Scheme);

ii) AMBEX Bulletin: A collection of AMBEX messages originating from MET offices within a collection area, always containing the same type of OPMET data and identified by an appropriate identifier. Bulletins should not exceed 1800 characters in length;

iii) ***National OPMET center (NOC).*** Normally, a NOC is associated with the State's national AFTN/AMHS centre/switch. The role of the NOC is to collect all required OPMET messages generated by the originating stations in the State and to send them to the responsible AMBEX bulletin compiling center (AMBEX BCC). Some NOCs serve also as AMBEX BCCs. National regulations should be developed to ensure that NOCs disseminate the international OPMET data within their own State, as necessary.

iv AMBEX Bulletin Compiling Centre (BCC): AMBEX centres (former TCC, MCC or ACC, etc..) are responsible for collection of OPMET messages from the originating stations or NOCs in their area of responsibility and for compiling these messages into AMBEX bulletins. FASID Tables MET 4A and MET 4B determine the areas of responsibility (or, collection areas) of the AMBEX centres for METAR/SPECI, and TAF, respectively.

v) OPMET Inter-regional Gateway (IROG) A designated centre charged with the responsibility of exchanging OPMET data between stations within the AFI Region and in adjacent regions, as prescribed in this Handbook. The plan of OPMET data exchange between regions through an IROG is based on pre-determined distributions responsibilities;

vi) YPYX: Fifth, sixth, seventh and eighth letter of an addressee indicator to be used:

a) with the normal four-letter location indicators, to designate BCCs

b) with indicators for pre-determined distribution within a BCC collection area.

vii) Regional OPMET Data Bank (RODB): A centre charged with task to collect required OPMET bulletins from AMBEX centres, handle all types of OPMET bulletins, provide facilities for "request-reply" service to authorized users, maintain a catalogue of bulletins, quality control the incoming bulletins and inform AMBEX centres on any deficiencies, monitor the OPMET traffic and report to the ICAO Regional Office on the results

Note: The designated RODB and their responsibilities are described in ***Appendix E***

4. OPMET INFORMATION AND OPMET EXCHANGES

4.1 OPMET Data Type

4.1.1 The following OPMET data types should be handled by the AMBEX scheme:

Data type	Abbreviated name	WMO data type designator
Aerodrome reports	METAR SPECI	SA SP
Aerodrome forecasts	TAF: 24 and 30 hours	FT
SIGMET information	SIGMET SIGMET for TC SIGMET for VA	WS WC WV
Volcanic ash and tropical cyclone advisories	Volcanic Ash Advisory Tropical Cyclone Advisory	FV FK
Air-reports	AIREP SPECIAL (ARS)	UA
Administrative	ADMIN	NO

4.2 OPMET bulletins

4.2.1 The exchange of OPMET data is carried out through bulletins containing one or more meteorological messages (METAR, SPECI, TAF or other OPMET information). An OPMET bulletin contains messages of the same type.

4.2.2 The format of OPMET bulletins is determined by:

ICAO Annex 10, Aeronautical telecommunications, as regards the AFTN/AMHS envelope of the bulletin;

WMO-No.386, *WMO Manual on the Global telecommunication System*, as regards the WMO abbreviated heading of the bulletin;

ICAO Annex 3 and WMO-No.306, *Manual on Codes*, as regards the format and coding of the information included in the bulletin.

4.3 Types of OPMET exchange

4.3.1 Regional exchange – AMBEX scheme

4.3.1.1 The AMBEX scheme covers the exchange of OPMET information in the AFI region. It includes several types of exchanges as described below.

4.3.1.1.1 *Regular Exchange under AMBEX*. This is a scheduled exchange that encompasses collection of messages from the originating stations, compiling of bulletins and their dissemination according to predetermined distribution schemes. The collection and distribution is carried out at fixed times and the bulletin content is defined in the current Handbook.

4.3.1.1.2 *Non-regular exchange.* This includes:

Exchange on request (request-reply service). The RODBs store OPMET data and make them available on request.

Exchange of non-routine reports: SPECI; TAF AMD; SIGMET; TCA and VAA; ADMIN messages.

4.3.2 Inter-regional OPMET exchange

4.3.2.1 Exchange of OPMET data between the AFI and the other ICAO Regions is carried out via designated centres, which serve as Inter-regional OPMET Gateways (IROG). An IROG is set up for sending/receiving required OPMET data between AFI and every other ICAO regions.

4.3.2.2 Inter-regional OPMET exchange via IROGs is carried out through the ground segment of the AFS (currently, through the AFTN/AMHS).

4.3.3 Exchange of OPMET information through the satellite segment of the AFS

4.3.3.1 The satellite broadcast provided by the United Kingdom (Satellite Distribution System for Aeronautical Information Relating to Air Navigation - SADIS) forms another type of OPMET exchange, which is global in nature and is intended to cover the emerging requirement for global access to all available OPMET data.

4.3.3.2 All AFI data handled by the AMBEX scheme should be relayed to the SADIS for global broadcast.

5 COMPOSITION OF AMBEX

5.1 Components of the AMBEX

5.1.1 AMBEX scheme involves a number of aeronautical meteorological stations, aeronautical telecommunication stations, aerodrome meteorological offices and other operational units. The following operational units should be considered as components of the AMBEX scheme:

Originating station

National OPMET center (NOC)

AMBEX bulletin compiling centre (BCC)-AMBEX Centre

Regional OPMET Data Banks (RODBs)

Interregional OPMET gateway (IROG)

5.2 Originating Station

5.2.1 It is an aeronautical meteorological station or an aerodrome meteorological office, or a forecasting office, or a MWO, or a TCAC, or a VAAC. The duties and responsibilities of these originating stations should be defined by the State's meteorological authority.

5.3 National OPMET Center (NOC).

5.3.1 Normally, a NOC is associated with the State's national AFTN/AMHS centre/switch. The role of the NOC is to collect all OPMET messages generated by the originating stations in the State and to send them to the responsible AMBEX bulletin compiling center (AMBEX BCC). Some NOCs serve also as AMBEX BCCs. National regulations should be developed to ensure that NOCs disseminate the international OPMET data within their own State, as necessary.

5.4 AMBEX Bulletin Compiling Centre (AMBEX BCC or, in brief, AMBEX centre).

5.4.1 AMBEX centres are responsible for collection of required OPMET messages from the originating stations or NOCs in their area of responsibility and for compiling these messages into AMBEX bulletins. FASID Tables MET 4A and MET 4B determine the areas of responsibility (or, collection areas) of the AMBEX centres for METAR, SPECI and AIREP SPECIAL, and TAF, respectively.

5.4.2 The AMBEX centres are responsible for the transmission of the bulletins compiled by them to:

other AMBEX centres, according to predefined distribution lists, specific for each bulletin;

AFI RODBs (Dakar and Pretoria);

NOCs or other COM or MET offices in the States in their area of responsibilities, as agreed between the AMBEX centre and the States' authorities concerned.

5.5 Regional OPMET Data Banks (RODB)

5.5.1 Two centres have been designated by APIRG (APIRG/13 Conclusion 13/67, 2001), to serve as Regional OPMET Data Banks: Dakar and Pretoria. FASID Table MET 4C reflects the requirements for the operation of the AFI OPMET data banks to support the AMBEX Scheme.

5.5.2 The **main responsibilities** of the RODBs are defined, as follows:

to support the AMBEX Scheme and to facilitate a regular exchange of required OPMET information based on predetermined distribution within the AFI Region;

to provide facilities for request/response type of access to the stored OPMET data for users to obtain non-regular or occasional information.

Note. — The interrogation procedures applicable to the OPMET data banks and catalogues are provided in the "AFI Regional Interface Control Document (ICD) - OPMET Data Bank Access Procedures", *published and maintained by the ICAO Regional Offices in Dakar and Nairobi*

5.6 Inter-regional OPMET Gateways (IROG).

5.6.1 The Inter-regional OPMET Gateways in the AFI Region are the designated RODBs. Each RODB is assigned responsibility for exchange of required OPMET information between AFI region and the adjacent ICAO Regions. The responsibilities of the IROGs for AFI are shown in para. 11.1 of this Handbook.

5.6.2 ***Support to the SADIS broadcast.*** The RODBs and IROGs should facilitate the global exchange of OPMET data carried out through the SADIS satellite broadcast. In order to achieve this, close liaison should be maintained between the IROGs and the corresponding SADIS gateway. Availability of AFI data on SADIS should be monitored and any systematic shortfalls of data identified should be reported to the relevant ICAO regional office.

5.7 Structure of the AMBEX Scheme

5.7.1 The overall structure of the AMBEX scheme is presented in **Diagramme 1**

5.7.2 The AFI Communication Main Flow Chart is at **Diagramme 2** and the AFI routing Tables are given in **Appendix H.**

DIAGRAMME 1: AMBEX SCHEME

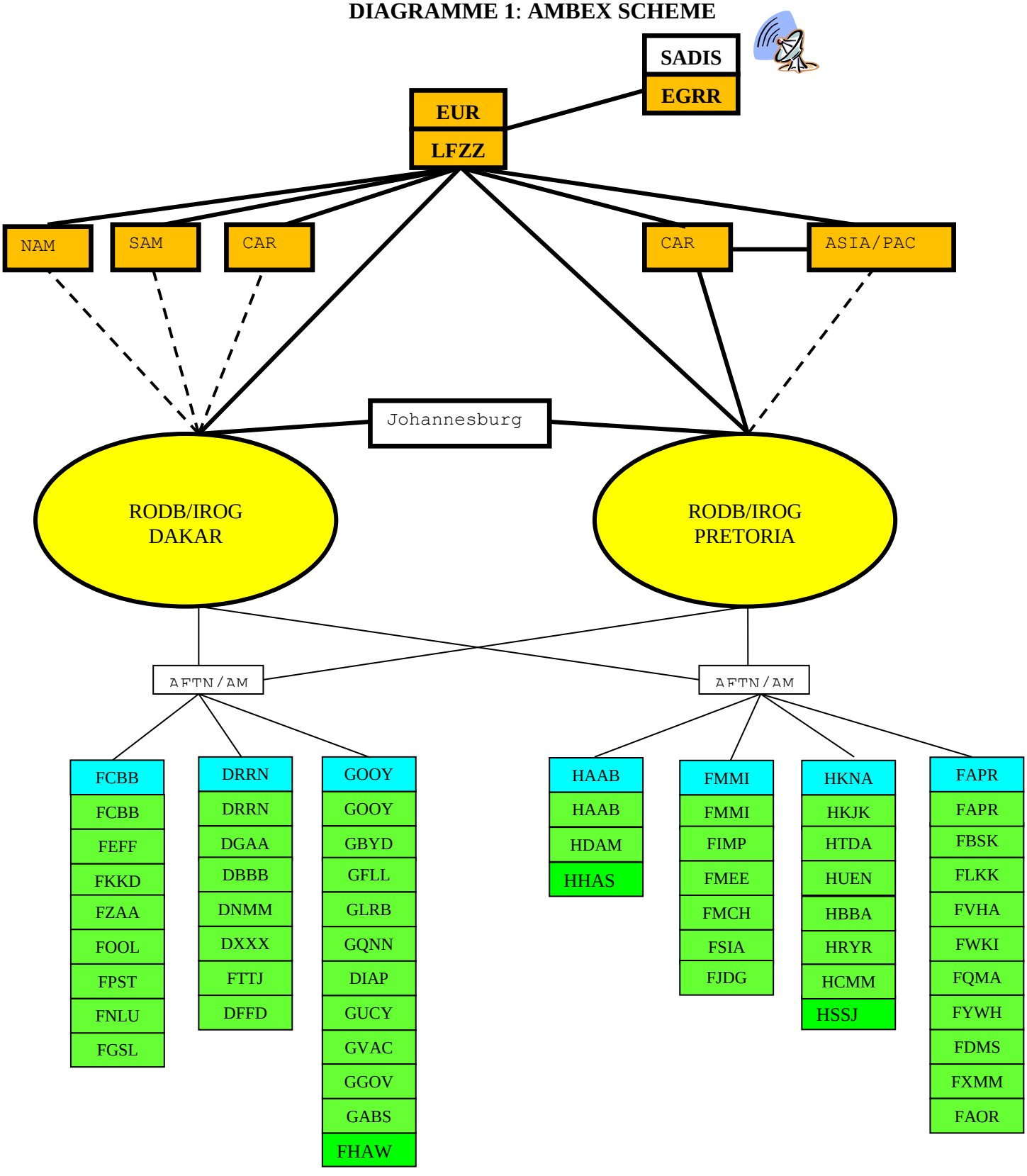
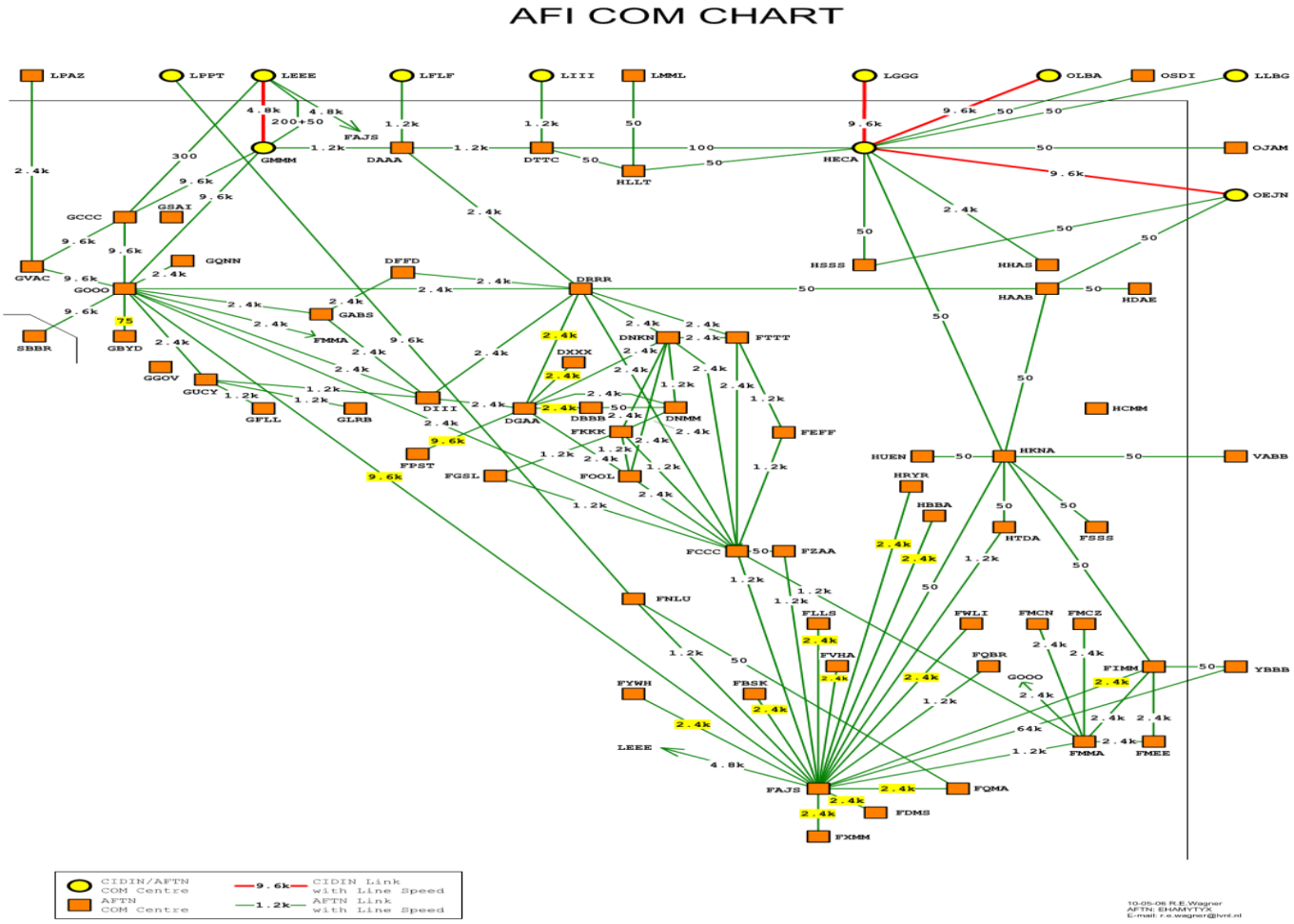


DIAGRAMME 2: AFI COM MAIN FLOW CHART



6. TAF EXCHANGE

6.1 General

6.1.1 Aerodrome forecast (TAF) should be prepared by the aerodrome meteorological offices (AMOs) or other meteorological offices, designated for provision of TAF by the State's meteorological authority, for all international aerodromes, for which TAF is required according to FASID Table MET 1A of the AFI ANP. TAF should be included in the HF VOLMET broadcasts or D-VOLMET (cf. AFI BASIC para. 90).

All TAFs as described in the AFI FASID Table MET 2A are included in the regular AMBEX exchange.

Note : SADIS User Guide (SUG) Annex 1 presents the requirements for OPMET data (METAR and TAF) by aviation users. When OPMET data from domestic airports (so called non-AOP airports) is required by users, the corresponding State is consulted on its agreement for providing this additional information. If the information is available and the State agrees to include it in the exchange, the additional airports are included in SUG Annex 1 and the State should provide the additional OPMET information on a continuous basis.

6.1.3 The requirements for the exchange of 24 or 30-hour TAFs (so called "long" TAFs with WMO data designator – FT), are set in FASID Table MET 1A of the ANP. "Short" TAFs with 9- or 12-hour period of validity (WMO data designator - FC), are no longer issued by States in the AFI region.

6.1.4 OPMET messages and bulletins are normally sent via the AFTN/AMHS. In exceptional circumstances, when the AFTN/AMHS cannot give adequate support to AMBEX traffic, the temporary use of alternative existing communications systems should as far as possible be coordinated with the concerned ICAO Regional Offices.

6.1.5 Each OPMET message and OPMET bulletin should conform strictly to the Annex 10 message format.

6.1.6 Each OPMET message and OPMET bulletin should carry a WMO abbreviated heading (see **Appendix C)**.

6.1.7 Each OPMET message or bulletin, should terminate with an equal (=) sign (signal no. 22 of International Telegraph Alphabet no.2 in the figure case).

6.1.8 The procedures described in this Handbook are as well intended for the manual preparation of AMBEX messages and bulletins. It is not intended, however, that the Handbook precludes the use of automated or semi-automated procedures. When required, the procedures described hereunder should be modified and applied in a manner which will fully exploit the capabilities of the equipment available. The AMBEX messages and bulletins produced by application of such modified procedures should be in a format compatible with the format described in this Handbook.

6.2 Responsibilities and procedures to be followed by originating Aerodrome Meteorological Offices (AMOs) and NOCs

6.2.1 Originating AMOs (or other designated forecasting offices) should prepare the required TAF messages for the periods of validity indicated in **Appendix B**. TAFs should be sent by the AMOs or NOCs and to the responsible AMBEX center before the cut-off time set up by this centre and not earlier than one hour prior to the beginning of its validity period.

6.2.2 Aerodrome meteorological offices in preparing TAF should follow strictly the template for TAF in Annex 3, Appendix 5 and the WMO TAF code form (FM 51-XII TAF, WMO – No. 306, *Manual on Codes*, Volume I.1, Part A – *Alphanumeric Codes*).

6.2.3 TAFs should be monitored by the originating AMOs and amended TAF (TAF AMD) should be issued according to the established criteria. Amended TAFs should be sent by the originating station to the responsible AMBEX centre with no delay. The optional group BBB should be used in the WMO abbreviated heading to indicate amended TAF in accordance with **Appendix C**.

6.2.4 TAF messages should be quality controlled by the originating meteorological offices and, when necessary, a corrected TAF (TAF COR) should be sent immediately after an error in an already transmitted message had been identified.

6.2.5 The NOC shall send the TAF messages for the BCC to receive them not later then 5 minutes after the time shown in column 6 of Appendix B.

6.2.6 The BCC shall send the TAF bulletins for the RODBs to receive them not later then 10 minutes after the time shown in column 6 of Appendix B.

6.2.7 The following is an outline of the procedures to be applied in preparing an AMBEX message at an office other than a BCC:

Parts of Message	Resulting Page Copy
a) Priority Indicator and Address	GG DRRNYPYX
b) Date and Time of Filing and Originator	281100 DGAAYMYX
c) WMO Abbreviated Heading (see **Appendix C)**	FTGH31 DGAA 281100
d) TAF	TAF DGAA 281100Z 2812/2918 ... =
e) Normal Ending.	

6.2.8 If an amendment to a TAF previously issued becomes necessary, a new AMBEX message should be prepared and sent to the BCC concerned. The WMO abbreviated heading for this message should be the same as for the AMBEX message containing the original TAF, with the addition of the optional groups AAA, AAB, AAC etc. (to indicate the first, second, third etc. amendment to the original TAF). Optional groups are also used for sending delayed TAFs, RRA, RRB, RRC, etc and corrected TAFs

CCA, CCB, CCC, etc in accordance with **Appendix C**.

6.2.9 Requests for missing bulletins should be sent to the BCC responsible for compiling the bulletins and should be in the following format:

Parts of Message	Resulting Page Copy
a) Priority Indicator and Address of the BCC concerned	GG HKJKYPYX
b) Date and Time of filing and Originator	051305 FMMIYMYX
c) Text	RQM/SAYSSY, YBBN, YMML=
d) Normal ending	.

6.2.11 Provisions concerning request messages to the AFI RODBs are given in the ICD of the Dakar and Pretoria RODBs.

6.2.12 The OPMET data catalogue given in AFI ICD shall be implemented by AFI NOCs, BCCs and RODBs (Conclusion 18/46 of APIRG/18 refers).

6.3 Responsibilities and procedures to be followed the AMBEX Centres (BCCs)

6.3.1 Bulletins compilation centres should collect TAFs from the AMOs and/or NOCs in their area of responsibility and compile TAF Bulletins so that the RODBs have receive them not later then 10 minutes after the time shown in column 6 of **Appendix B**. The areas of responsibility, as far as practicable, should group together aerodromes and their alternates. AMBEX centres should ensure that TAFs within their area of responsibility have common periods of validity.

6.3.2 AMBEX centres should establish a cut-off time for reception of TAFs from AMOs and/or NOCs in their area of responsibility, e.g., not earlier than one hour prior to the beginning of its validity period and not after **10 minutes** after the filing/transmission times specified in **Appendix B**. At the cut-of time AMBEX centres should compile TAF bulletin(s) containing all prescribed aerodromes, without indicating any missing TAF with "NIL" centre and not earlier than one hour prior to the beginning of its validity period.

6.3.3 The filing time for 24- and 30-hour TAF bulletins should be **one hour** before the start of the validity period.

6.3.4 AMBEX centres should transmit the compiled TAF bulletins to other AMBEX centres and the RODBs according to the distribution lists as specified for each TAF bulletin in **Appendix B**.

6.3.5 AMBEX centres should transmit the TAF bulletins compiled by them, as well as TAF bulletins received from other AMBEX centres, as necessary, to the NOCs and/or other offices in the States in their area of responsibility, as agreed between the AMBEX centre and the meteorological authorities of the States concerned.

6.3.6 A TAF message received by a AMBEX centre after the scheduled transmission of the corresponding bulletin is a delayed TAF. The AMBEX centre should then prepare an AMBEX bulletin of all TAFs received.

6.3.7 Amended TAF (TAF AMD) received from an AMO or NOC should be distributed with no delay as an amended TAF bulletin to all recipients in the distribution list for the TAF bulletin, to which the originating aerodrome belongs. The optional BBB group should be used in the WMO bulletin heading accordingly.

6.3.8 Each BCC should establish a cut-off time for the reception of AMBEX messages from stations within its AOR. The cut-off time should be about **twenty minutes** after the times of preparation of TAFs shown in column 6 of **Appendix B.**

6.3.9 A new tape, containing the address, origin and WMO abbreviated heading of the bulletin, is prepared. The bulletin is then assembled by combining this new tape with the text portions of the AMBEX messages received and adding a normal ending. Details of the WMO abbreviated headings that should be used by BCCs in their bulletins are given in **Appendix C**.

6.3.10 AMBEX centres should disseminate their own bulletins to the stations listed in column 9 of **Appendix B**. This dissemination should take place some **thirty minutes** after the time for preparation of the TAFs shown in column 6 of **Appendix B**.

6.3.11 No addresses other than those listed in column 10 of **Appendix B** should be used except in response to request messages.

6.3.12 The following is an outline of the procedures to be followed by AMBEX centres in the preparation of AMBEX bulletins.

Parts of Bulletin	Resulting Page Copy
a) Priority Indicator and Address	GG FAORYMYX FCZZXLBX GOOZZSNGX HAZZYPYX HEZZYPYX HKZZYPBX
b) Date and Time of Filing and Originator	281130 DRRNYPYX
c) WMO Abbreviated Heading (see **Appendix B**)	FTA033 DRRN 281100
d) TAFs received from the stations in the AOR, in order shown in column 2 of **Appendix B**	TAF DRRN 281100Z 2812/2912 24003KT 8000 BKN020 BECMG 2813/2815 SCT018CB BKN020 TEMPO 2817/2820 VRB03 TSRA SCT015CB BKN020 FM290600 16008KT 9999 BKN020 BKN120 =

TAF DGAA 281100Z 2812/2912 13010KT 9000 BKN020 TEMPO 2816/2820 3000 DZ BKN005 OVC050 FM290400 17010KT 9999 BKN015 BNK100 =

TAF DBBB 281100Z 2812/2912 26008KT 9000 BKN020 PROB30 TEMPO 2815/2818 3000 TSRA BKN005 SCT020CB FM290000 24006KT 9000 BKN010 =

TAF DNKN 281100Z 2812/2912 VRB03KT 9999 BKN015 PROB30 TEMPO 2813/2816 2000 FG BKN003 BKN010 FM282000 24006KT 9000 BKN020 =

TAF DNMM 281128Z 2812/2912 24006KT 9000 BKN020 PROB30 TEMPO 2814/2816 3000 DZ BKN005 BKN010=

TAF DXXX 281130Z 2812/2912 26008KT 9999 BKN015 BECMG 2815/2817 SCT015CB BKN020 TEMPO 2818/2820 22020G35KT 2000 TSRA SCT010CB BKN020 FM282030 26006 9999 BKN020 BKN100 =

TAF FTTJ 281130Z 2812/2912 12006KT CAVOK TEMPO 2818/2820 SCT030 =

TAF DFFD 281130Z 2812/2912 20004KT 9999 BKN020 BECMG 2814/2816 SCT018CB BKN020 TEMPO 2816/2818 24010KT TSRA SCT015CB BKN020 FM290600 22008KT 9999 BKN020 BKN100 =

e) Normal Ending NNNN.

6.3.13 TAFs received by an AMBEX Centre after the cut-off time, and which have still at least 6-hour validity left, should be included in one or more bulletins of delayed TAFs. The WMO Abbreviated Heading for such bulletins should be the same as for the bulletin from which the TAFs are missing, with the addition of the optional groups RRA, RRB, RRC etc. (to indicate the first, second, third etc. bulletin of delayed TAFs), in accordance with **Appendix C,** paragraph 4.

6.3.14 When an AMBEX centre receives amended TAFs from originating stations or NOCs, it should prepare bulletins of amended TAFs. The WMO abbreviated heading for such bulletins should be the same as for the bulletin containing the original TAF, with the addition of the optional groups AAA, AAB, AAC etc. (to indicate the first, second, third etc. amendment to TAFs in the original bulletin), in accordance with **Appendix C**, paragraph 4.

6.3.15 "NIL" to indicate a missing TAF should not be used in AMBEX bulletins.

6.3.16 In addition to its own AMBEX bulletins, each BCC should distribute bulletins received from other BCCs to the MET offices within its originating stations or NOCs.

6.4 Format and content of TAF bulletins

6.4.1 Issuance and period of validity:

6.4.1.1 24- and 30-hour TAFs should be issued at intervals of six hours, with the period of validity beginning at one of the main synoptic hours (00, 06, 12, 18 UTC), as shown in the table below.

Synoptic hours (UTC)	24-hour TAF		30-hour TAF	
	Period of validity	Filing Time	Period of validity	Filing Time
00	00-24	23*(-1)	00-06 (+1)	23*(-1)
06	06-06	05	06-12 (+1)	05
12	12-12	11	12-18 (+1)	11
18	18-18	17	18-24 (+1)	17

**Note: "-1" indicates the previous day and "+1" indicates the next day*

6.4.1.2 All TAFs in a AMBEX TAF bulletin should have a common period of validity. It is not allowed to mix "long" and "short" TAFs in one bulletin.

6.4.2 Each TAF message in a TAF bulletin should start with the code word TAF followed by the ICAO location indicator (CCCC) of the aerodrome and the date/time group (YYGGggZ), indicating the official time of issuance. Corrected TAF messages, should start with TAF COR. Amended forecasts should start with TAF AMD.

6.4.3 The use of the BBB group in the WMO heading for delayed, corrected, or amended TAFs is described in **Appendix C**.

6.4.4 The following is an outline of the format to be applied by a AMBEX centre in preparing a TAF bulletin, containing "long" TAFs (24 or 30 hour):

Parts of Message	**AMBEX FT Bulletin**
AFTN header	
Priority Indicator and Address	GG YBBBYPYX
Date and Time of filing and Originator	271104 ZBBBYPYX
WMO Abbreviated Heading	FTCI31 ZBBB 271100
TAF messages	TAF ZBAA 271100Z 2712/2812..…= TAF ZBTJ 271100Z 2712/2818…….=
AFTN Normal Ending	NNNN…..

6.4.5 A missing TAF in a TAF bulletin should be indicated with "NIL", as shown in the following example:

TAF VTBD 281100Z NIL=

6.4.6 A cancelled TAF in a TAF bulletin should be indicated with "CNL", as shown in the following example:

TAF VTBD 281100Z 2812/2912 CNL=

7. SPECIAL AIREP EXCHANGE

7.1 The meteorological watch offices (MWO) are responsible for collection through their associated ATS units of special air reports (AIREP SPECIAL) received from aircrafts within their FIR or CTA.

Note: – Routine air-reports received by data-link communications should be relayed directly to their associated meteorological watch office and WAFCs and the WAFCs by the ATS unit.

7.2 MWOs should collect all special air-reports and prepare one-hour collectives in the form of a UA bulletin for transmission to the responsible AMBEX centre at the time specified by the AMBEX centre.

Notes: 1) The transmission of air-reports to the WAFCs as required by Annex 3 should be arranged by the meteorological authorities concerned.
2) MWOs should follow the special requirements for the dissemination of special air-reports as defined by Annex 3,

7.3 AFI FASID Table 2B describes the exchange of SIGMET and special AIREP reports procedures.

8. METAR/SPECI EXCHANGE

8.1 General

8.1.1 Hourly METAR reports should be prepared by all international aerodromes listed in FASID Table MET 1A. METAR should be issued **on an hour intervals** for those aerodromes, included in the HF VOLMET broadcasts or D-VOLMET (cf. AFI BASIC para. 93).

8.1.2 METAR from all international aerodromes listed in Table AOP 1 of the Basic ANP and , in FASID Table MET 1A, should be included in the regular AMBEX exchange. In addition, METAR from a number of domestic aerodromes, required by the users, should also be included in the regular AMBEX exchange in accordance with para. 12.1.3, if so agreed by the States concerned.

Note: SADIS User Guide (SUG) Annex 1 presents the requirements for OPMET data (METAR and TAF) by aviation users. When OPMET data from domestic airports (so called non-AOP airports) is required by users, the corresponding State is consulted on its agreement for providing this additional information. If the information is available and the State agrees to include it in the exchange, the additional airports are included in SUG Annex 1 and the State should provide the additional OPMET information on a continuous basis.

8.1.3 Description of the AFI METAR bulletins included in the regular AMBEX exchange, containing the responsible compiling AMBEX centre, WMO bulletin identification, and the list of aerodromes included in the bulletin, is given in **Appendix A**.

8.1.4 The official hour of observation to be included in the METAR bulletin heading is indicated in the table in **Appendix A**.

8.1.5 All METAR bulletins should be sent to both RODBs Dakar and Pretoria. AMBEX centres should exchange METAR bulletins according to the distribution lists given in **Appendix A**.

7.1.6 SPECI reports should be disseminated in the same way as the METAR reports originated by the same aerodrome.

8.1.7 Exchange of METAR/SPECI messages outside AMBEX scheme, if necessary should be carried out by direct AFTN/AMHS addressed messages.

8.2 Responsibilities of originating stations and NOCs

8.2.1 The originating stations (aeronautical meteorological stations) and/or NOCs should prepare METAR messages for the observation times indicated in **Appendix A** and send them to their responsible AMBEX center.

8.2.2 SPECI should be prepared between the regular observation times, following the requirements set in Annex 3 and sent with no delay to the responsible AMBEX centre.

8.2.3 In preparing METAR and SPECI messages the originating stations should follow strictly the specifications for METAR and SPECI in Annex 3 (Chapter 4 and Appendix 3 including the template in Table A3-2) and the WMO METAR and SPECI code forms (FM 15-XII METAR and FM 16-XII SPECI, WMO – No. 306, *Manual on Codes*, Volume I.1, Part A – *Alphanumeric Codes*).

8.2.4 METAR messages should be sent to the responsible AMBEX centre before the cut-off time specified by the AMBEX centre, to allow for timely compilation of the METAR bulletin. If, for some reason, a METAR message has not been sent before the cut-off time, the originating station/NOC should send it as soon as possible after that, as a **delayed message**. The originating stations/NOCs should follow strictly the schedules specified for METAR messages and keep to a minimum the number of delayed messages.

8.2.5 METAR and SPECI messages should be quality controlled by the originating stations/NOCs and, when necessary, a corrected message should be sent immediately after an error in an already transmitted message had been identified.

*Note: Procedures applying to the corrected and delayed messages are given in **Appendix C**.*

8.3 Responsibilities of AMBEX Centres

8.3.1 AMBEX centres should collect METAR messages from the aerodromes in their area of responsibility and compile METAR bulletins, according to **Appendix A**. The content of bulletins and the order of stations in each bulletin should be kept fixed until a bulletin change is requested and coordinated according to the established procedure.

8.3.2 AMBEX centers should determine a cut-off time for the reception of METAR from the stations in their area of responsibility. At the cut-off time, the AMBEX centre should compile METAR bulletin(s) containing all prescribed aerodromes, indicating any missing METAR with "NIL".

8.3.3 At scheduled transmission times AMBEX centres should transmit the compiled METAR bulletins to other AMBEX centres and RODBs according to the distribution lists specified for each METAR bulletin in **Appendix A**. METAR bulletins should be filed for transmission not later than 5 minutes after the observation time.

8.3.4 AMBEX centres should transmit the METAR bulletins compiled by them, as well as bulletins received from other AMBEX centres, as necessary, to the NOCs and/or other offices in the States in their area of responsibility, as agreed between the AMBEX centre and the meteorological authorities of the States concerned.

8.3.5 A SPECI when received by an AMBEX centre should be sent as a SPECI bulletin to the same addresses, to which METAR from the issuing aerodrome are sent. Normally, a SPECI bulletin should contain a single SPECI.

8.3.6 The WMO heading of a SPECI bulletin should be constructed in the same way as the WMO heading of the METAR bulletin, which contains the aerodrome, for which the SPECI is issued, by using SP data type designator instead of SA.

8.3.7 A METAR message received by the AMBEX centre after the scheduled transmission of the corresponding bulletin is a delayed METAR. The AMBEX centre should send a delayed bulletin as soon as one or more delayed messages are received or at specified times after the scheduled bulletin time (e.g., the first delayed bulletin (RRA) issued 10 minutes after the regular time; the second delayed bulletin (RRB) issued 20 minutes after the regular time, etc.).

8.3.8 As soon as a corrected METAR or SPECI message is received from a station the AMBEX centre should transmit it as a corrected bulletin to all recipients.

8.4 Format and content of METAR Bulletins

8.4.1 Each METAR message in a METAR bulletin should start with the code word METAR followed by the ICAO location indicator (CCCC) of the aerodrome and the date/time group (YYGGggZ), indicating the official time of observation. Corrected METAR messages, should start with METAR COR.

8.4.2 The following is an example of the format to be applied in preparing a METAR bulletin by the AMBEX centre:

Parts of Message	AMBEX SA Bulletin
AFTN header	
Priority Indicator and Address Date and Time of filing and Originator	GG VTBBYPYX 271304 ZBBBYPYX
WMO Abbreviated Heading	SACI31 ZBBB 271300
METAR messages	METAR ZBAA 271300Z ..…… = METAR ZBTJ 271300Z …….=
AFTN Normal Ending	NNNN

Note: The inclusion of the code name METAR in front of each message in the METAR bulletin is compulsory.

8.4.3 The rules related to the use of the BBB group in the WMO abbreviated heading, in regard to delayed or corrected bulletins, are given in **Appendix C**.

8.4.4 For METARs, which are not available at the time of compilation of the bulletin, the code word NIL should be inserted following the date/time group indicating the time of the observation.

Example: METAR ZBTJ 271200Z NIL=

8.5 Format and content of SPECI Bulletins

8.5.1 A SPECI message included in a SPECI bulletin should start with the code word SPECI followed by the ICAO location indicator (CCCC) of the aerodrome and a date/time group (YYGGggZ) indicating the time of the observation of the meteorological conditions for which the SPECI is issued. Corrected SPECI messages, should start with SPECI COR. The following is an example of the format to be applied in preparing a SPECI bulletin by the AMBEX centre:

Parts of Message	AMBEX SP Bulletin
AFTN header	
Priority Indicator and Address Date and Time of filing and Originator	GG VTBBYPYX 081647 ZBBBYPYX
WMO Abbreviated Heading	SPCI31 ZBBB 081645
SPECI message	SPECI ZBAA 081645Z ..…… =
AFTN Normal Ending	NNNN

9. EXCHANGE OF SIGMET AND ADVISORIES

9.*1* SIGMET should be prepared by the meteorological watch offices (MWO) designated by the State's meteorological authority. The MWOs and their areas of responsibility are given in the FASID Table MET 1B of AFI ANP. SIGMET should be included in the HF VOLMET broadcasts or D-VOLMET (cf. AFI BASIC para. 95).

9.2 SIGMET should be distributed to the two RODBs, either directly or through the responsible AMBEX centre. The RODBs should make SIGMET messages available on request. In order to facilitate that, the originating MWOs, should use fixed WMO headings for their SIGMET bulletins as given in **Appendix E**.

9.3 SIGMET messages should be distributed to other ICAO regions and made available for uplink through SADIS. This distribution should be carried out through the relevant Inter-regional OPMET Gateways (IROGs).

9.4 Detailed information on the format of the SIGMET messages is provided in the AFI Regional SIGMET Guide, 9th edition, 2007, Amendment 2, June 2011, at the Web page

http://www.icao.int/wacaf/edocs/WACAF_Regional_SIGMET_Guide_en.pdf

9.5 Tropical Cyclone Advisories (TCAs) and volcanic ash advisories (VAAs) should be issued by the designated tropical cyclone and volcanic ash advisory centres (TCAC and VAAC), as indicated in the FASID Table MET 3A and MET 3B.

9.6 The TCACs and VAACs should send the advisories to the RODBs. The RODBs should make TCAs and VAAs messages available as appropriate or on request. In order to facilitate that, the originating TCACs and VAACs should use fixed WMO headings for their TCA and VAA bulletins as given in **Appendix E**

9.7 VAA and TCA messages should be distributed to other ICAO regions and made available for uplink through SADIS. This distribution should be carried out either directly by the VAACs and TCACs or through the relevant Inter-regional OPMET Gateway (IROG) such as Toulouse, France.

10. REGIONAL OPMET DATA BANKS (RODB)

10.1 The AFI Regional OPMET Data Banks and the AFTN/AMHS addresses to be used for direct access to the banks are shown below:

RODB	AFTN ADDRESS	AMBEX CENTRES AND AREA OF RESPONSIBILITY
Dakar	GOOYYZYZ	Brazzaville/FCBB Dakar/GOOY Niamey/DRRN
Pretoria	FAPRYMYX	Addis Ababa/HAAB Antananarivo/FMMI Pretoria/FAPR (Johannesburg/FAOR) Nairobi/HKNA

10.2 Responsibilities:

10.2.1 Collect OPMET bulletins from the AMBEX centres in the area of responsibility and store them in a data base.

10.2.2 Handle all type of OPMET bulletins, as described in p. 3.1.1.

10.2.3 Provide facilities for "request-reply" service to the authorized users.

10.2.4 Maintain a catalogue of bulletins and introduce changes to the bulletins when necessary according to the established procedures.

10.2.5 Quality control the incoming bulletins and inform the AMBEX centres of any discrepancies or shortfalls.

10.2.6 Monitor the OPMET traffic by carrying out regular tests on the availability and timeliness of the bulletins; report to the ICAO Regional Office on the results.

10.3 The interrogation procedures applicable to the designated RODBs and the OPMET information stored are presented in the AFI Regional Interface Control Document (ICD) - OPMET Data Bank Access Procedures.

10.4 Guidance on the management and quality control is provided in chapter 12 of this Handbook.

11. INTER-REGIONAL OPMET EXCHANGE - IROG FUNCTIONS

11.1 Inter-regional OPMET Gateways (IROGs) are designated in the AFI Region for the the purpose of exchanging OPMET data between the AFI and the other ICAO Regions, as shown in the table below.

AMBEX IROG	For Excchange of OPMET data between Regions
Dakar	AFI and EUR; SAM, NAM, CAR; MID, ASIA/PAC as backup to Pretoria
Pretoria	AFI and MID; ASIA/PAC, EUR; SAM, NAM, CAR as backup to Dakar

11.2 IROGs and their functions are described at **Appendix D.** IROGs arrange for relaying all AMBEX bulletins to a corresponding OPMET Gateway in the other ICAO regions concerned. In particular:

Dakar IROG relays all AFI bulletins to ROC Toulouse in the EUR Region, which serves the EUR, SAM, NAM and CAR Regions, and should receive and store all required OPMET bulletins from these Regions;

Pretoria IROG relays all AFI bulletins to ROC Toulouse in the EUR Region and IROG Bangkok in the the ASI/PAC Regions, and should receive and store all required OPMET bulletins from MID, ASIA/PAC, EUR, SAM Regions;

11.3 The following principles are applied to IROGs:

IROGs should have reliable and efficient AFTN/AMHS connection to the regions, for which they have exchange responsibilities, with adequate capacity to handle the OPMET data flow between the regions;

IROGs should be associated with AFTN/AMHS relay centres capable of handling efficiently the volume of traffic anticipated;

IROGs should be capable of handling all OPMET data types, as described in para.4.1.1.

11.4 In order to avoid duplication of the OPMET traffic and information, all inter-regional OPMET exchange should be directed through the IROGs. Inter-regional exchange via direct AFTN/AMHS addressing from the originator or AMBEX centre to recipients in the other ICAO Regions should be avoided, except when bilateral or other agreements require such direct exchanges.

11.5 Implementation of AFI RODB Backup Procedures

11.5.1 In accordance with APIRG/19 meeting Conclusion 19/43:

Dakar and Pretoria RODBs should implement
and maintain an identical OPMET bulletins catalogue;
the AFI Interface Control Document (ICD);
the same data validation criteria; and
conduct monitoring activities in order to ensure that the databanks contain required OPMET data at all times.

the bulletin compiling centres (BCCs) disseminate OPMET data to both Dakar and Pretoria RODBs using appropriate AFTN/AMHS addresses; and

the MTF include AFTN/AMHS addresses of both RODBs in the AFI ICD.

12. MANAGEMENT OF OPMET EXCHANGE UNDER THE AMBEX SCHEME

12.1 OPMET Bulletins Update Procedure

12.1.1 Information for changes of AMBEX bulletins should be disseminated to all AMBEX centres and national OPMET centres (NOC) concerned well in advance in order to allow the centres to introduce the necessary changes to their message handling systems. In this regard, a lead time period of two months (*or two AIRAC cycles*) is considered appropriate.

12.1.2 The AMBEX centre planning the change, should send a notification by e-mail or fax to the ICAO Office, Dakar or Nairobi with copy to all AMBEX Focal Points. The notification should include detailed information of the changes and the proposed time schedule. The Regional Office should inform all other ICAO Regional Offices of the changes to be introduced and the effective date of implementation.

12.1.3 All requests by users for changes to AMBEX bulletins should be addressed to the ICAO Regional Office concerned. The Regional Office should carry out the necessary coordination with the Sates and AMBEX centres concerned. The duration of the coordination process should be minimized so that the period between the user request and the implementation of the change (if agreed) should normally be less than 3 months.

12.2 Quality Management of OPMET Exchange under the AMBEX Scheme

12.2.1 Objectives and Scope

12.2.1.1 **Objectives:** Develop a management system that provides general guidance on procedures applied to OPMET exchange, which includes quality control aspects and introduces a non-real-time monitoring for OPMET exchange.

12.2.1.2 **Scope:** Management of OPMET data exchange will be organized in the following sections:

Quality Control	***Data quality control applies to OPMET validation and correction during data processing and during preparation of messages***
OPMET monitoring	***Monitor and evaluate the performance indicators for the scheduled OPMET data***

12.2.2 Quality Control – General Requirements

12.2.2.1 Quality control (QC) consists of examination of OPMET data at NOCs, AMBEX Centres and RODBs to check the messages for formatting and coding errors, as well as, for time and space consistency.

12.2.2.2 OPMET data should be checked in real time or as close to it as possible, at the first point, i.e., the originator, which may be: meteorological station, aerodrome meteorological office or meteorological watch office. Errors may occur during coding or transcription of meteorological messages by the observer or forecaster. The originating office should apply quality control procedures during data processing and preparation of messages, in order to eliminate the main sources of errors.

12.2.2.3 The national OPMET centre (NOC) should apply QC procedures on the incoming messages from national sources and on the compiled national bulletins.

12.2.2.4 It is also advisable to apply QC checks at the AMBEX Centre, where the AMBEX bulletins are received or compiled. If automation is available it should be used, or partly assisted by computing facilities. The principle is that every message should be checked, preferably at the various points along the data chain.

12.2.2.5 The checks that have already been performed by originating offices and AMBEX Centres are usually repeated at the OPMET data banks. Erroneous messages found by the RODB should be either rejected or corrected by reference back to the source or by the data bank itself. Data corrected by the data banks should be flagged in the database for record purpose.

12.2.2.6 As a result of the quality control process described above, OPMET data of established quality will be used in the exchange and stored in the data banks. The RODBs should compile information with regard to errors that were found and compile records, such as the numbers and types of errors detected during quality control. Such non-conformities should be reported to ICAO Regional Office, Dakar or Nairobi for follow-up action.

12.2.3 Quality Control Procedures

12.2.3.1 General guidance on the quality control procedures for each type of OPMET is outlined in **Appendix F.**

12.3 OPMET Monitoring

12.3.1 Monitoring of Scheduled OPMET Data

12.3.1.1 The monitoring shall focus on the measurement of three performance indicators (PIs), viz., Compliance, Availability and Regularity indices of the scheduled, routine OPMET data (SA, FT, FC) exchanged in the region. The PIs are described in detail in **Appendix F**.

12.3.1.2 Monitoring Reference. The monitoring shall involve the recording and analysis of data provided by the AFTN/AMHS circuit. The three PIs should be monitored against the respective AMBEX Tables.

12.3.1.3 Methodology: Data is monitored with reference to the procedures defined in **AppendixG** the EUR OPMET Data Monitoring Procedures as produced by APIRG MET/SG (Bulletin Management Group).

12.3.1.4 In accordance with Conclusion 18/41 of APIRG/18 Meeting, Dakar and Pretoria RODB Provider States shall

implement an automatic OPMET data monitoring scheme on quarterly basis (March 31, June 30, September, 30 and December 31 of each year);

perform regular 24 hour simultaneous monitoring starting at 0000 UTC on the first Wednesday of every month; and

distribute the monitoring statistics to the Chairman of the OPMET Management and the Secretariat with effect from July 2012.

12.3.2 Monitoring of Non-Scheduled OPMET data

12.3.2.1 Monitoring of non-routine OPMET data shall be executed for FK, FV, WC, WS, and WV.

12.3.2.2 Monitoring of SIGMET, VAA and TCA should be performed during the scheduled regional SIGMET tests in accordance with the procedures published by the Regional Offices, Dakar and Nairobi.

12.3.2.3 The monitoring results shall be presented in bulletin-oriented format, one line per bulletin indicating the abbreviated header (TTAAii CCCC YGGgg), the FIR/UIR where applicable, receipt time and originator.

12.3.3 Coordination with EUR for non-AFI SIGMET Monitoring

12.3.3.1 In accordance with Conclusion 18/45 of APIRG/18 meeting,

the two AFI RODB Provider States shall monitor the reception of SIGMET information during the regular (twice yearly) EUR Region SIGMET tests and report;

the two AFI IROGs and ROC Toulouse shall exchange their routing tables and verify the coherency of these tables; and

the AFI IROGs shall review their current routing tables, the status of OPMET reception, and update the routing tables as necessary

12.4 Monitoring Procedures of the AMBEX Scheme

12.4.1 In accordance with Conclusion 19/42 of the APIRG/19 meeting,

Dakar and Pretoria RODBs shall implement the following procedures:

Conduct the monitoring of OPMET received from AFI BCCs within the areas of responsibilities;

Analyze the monitoring results and identify shortcomings and deficiencies;

Develop and forward on a quarterly basis, the monitoring results and recommendations to be implemented;

Collaborate directly with the concerned State to assist removing the shortcomings which can be solved quickly; and

Issue on semester basis, a report on the above four actions to be forwarded to ICAO Dakar and Nairobi regional Offices.

ICAO Dakar and Nairobi regional Offices shall

distribute the report through a State Letter to AFI States with particular emphasis on the concerned States with the deficiencies;

Visit the concerned States during State missions to provide further advice and awareness; and

organize when required, training workshops for the personnel of the AMBEX Centres (RODBs, BCCs and NOCs), to assist the States concerned to address deficiencies related to the implementation of the AMBEX scheme.

12.5 AMBEX Focal Points

12.5.1 In order to facilitate exchange of information between the AMBEX centres a system of AMBEX focal points have been developed. Contact details of the persons designated as AMBEX focal points by the relevant State's authorities is provided in **Appendix I**.

APPENDIX A

AMBEX COLLECTION AND DISSEMINATION OF METAR (SA) BULLETINS

Table A : METAR

Explanation of Table

Column

1: Name of the BCC or RODB compiling the bulletin.

2. ICAO location indicator of the BCC or RODB.

3. Bulletin identifier- The identifier to be used in the WMO abbreviated heading of AMBEX METAR bulletins prepared by the BCC in Column 1.

4. ICAO location indicator of the aerodrome forming part of the collection area of the BCC in Column 1.

5. Name of the aerodrome forming part of the collection area of the BCC in Column 1.

6. Preparation - Times at which BCC in column 1 should prepare METAR bulletins for further dissemination.

9. Distribution of the bulletin to other RODBs, BCCs, and corresponding NOCs – Name of the main RODB in **bold**.

FA8. Distribution of the bulletin to other AMBEX centres and RODBs – AFTN/AMHS address of the AMBEX/RODB Centre.

*Note: The RODB responsible for storing the bulletin is in **bold***

Notes: 1 Aerodromes with shaded text are included in the HF VOLMET Broadcast
2 The RODB responsible for storing the bulletin is in bold
3 Non-AOP aerodeomes indicated in *italics*

RODB/BCC		**METAR BULLETIN**				**DISSEMINATION TO**	
Name	**CCCC**	**Bul. Id.**	**CCCC**	**Aerodrome**	**Prepar.**	**RODB/BCC/ NOC**	**AFTN/AMHS Adress**
1	2	3	4	5	6	7	8
ADDIS ABABA	HAAB	SAEA31	HAAB HADR HDAM HHAS *HHMS* HHSB	Addis Ababa Dire Dawa Djibouti/Ambouli Asmara *Massawa* Assab	H+10	Nairobi Addis Ababa Niamey Antananarivo Dakar Dakar **Pretoria**	HKZZYPBX HAZZYPYX DRZZNAZX FMZZYPYY GOOYYZYZ GOZZSNGX **FAPRYMYX**
ANTANA NARIVO	FMMI	SAIO31	FMMI FMNM FMMT FMNA FMNN FMMS FMSD	Antananarivo Mahajanga Toamasina Antsiranana Nosy-Be Sainte-Marie Tolagnaro	H+10	Addis Ababa Nairobi Dakar Dakar **Pretoria** Antananarivo	HAZZYPYX HKZZYPBX GOOYYZYZ GOZZSNGX **FAPRYMYX** FMZZYPYB
		SAIO34	FIMP *FIMR* *FJDG* FMCH FMEE *FMCZ* *FMEP*	Mauritius *Rodrigues* *Diego Garcia* Moroni Saint-Denis *Dzaoudzi* *Saint Pierre*			
BRAZZA VILLE	FCBB	SAAM31	FCBB FCPP FEFF FEFT FKKD FKKR FKKN FKYS FKKL	Brazzaville Pointe Noire Bangui Berberati Douala Garoua N'gaoundere Yaounde Maroua/Salak	H+10	Brazzaville Niamey Addis Ababa Nairobi Pretoria Dakar **Dakar**	FCZZXLBX DRZZNAZX HAZZYPYX HKZZYPBX FAPRYMYX GOZZSNGX **GOOYYZYZ**
		SAAM34	FZAA FZNA FZIC FZQA FZWA	Kinshasa Goma Kisangani Lubumbashi Mbuji-Mayi			
		SAAM36	FOOL FOOG FOON FNLU FNHU FGSL *FGBT*	Libreville Port Gentil Franceville Luanda Huambo Malabo *Bata*			

			FPST	Sao Tome			

RODB/BCC		**METAR BULLETIN**				**DISSEMINATION TO**	
Name	**CCCC**	**Bul. Id.**	**CCCC**	**Aerodrome**	**Prepar.**	**RODB/BCC/NOC**	**AFTN/AMHS Adress**
1	2	3	4	5	6	7	8
DAKAR	GOOY	SAAO30	GOOY GOGS *GOOK* GOSS *GOTK* GOTT GOGG	Dakar Cap Skiring *Kaolack* Saint Louis *Kedougou* Tambacounda Ziguinchor	H+10	Antananarivo Brazzaville Niamey **Dakar** Dakar Pretoria Toulouse Rio de Janeiro Bangkok Jeddah	FMZZYPYB FCZZXLBX DRZZNAZX **GOOYYZYZ** GOZZSNGX FAPRYMYX LFZZMAFI SBGLYMYX VTBDYMYX OEJNYMYX
		SAAO31	*FHAW* GGOV DIAP DIBK *DIYO*	*Ascension I* Bissau Abidjan Bouake *Yamoussoukro*			
		SAAO32	GABS GAGO GAKD GAKL GAMB GANR GATB	Bamako Gao Kayes Kidal Mopti Nioro Tombouctou			
		SAAO33	GQPP GQNN GQPA GQNI GQPZ GUCY GUXN GULB GUNZ	Nouadhibou Nouakchott Atar Nema Zoueratt Conakry Kankan Labe N'zerekore			
		SAAO34	GBYD GFLL GLRB GVAC *GVBA* GVNP *GVSV*	Banjul Freetown Monrovia Sal *Rabil/Boa Vista* Praia *Sao Pedro/Sao Vicente*			

RODB/BCC		**METAR BULLETIN**				**DISSEMINATION TO**	
Name	**CCCC**	**Bul. Id.**	**CCCC**	**Aerodrome**	**Prepar.**	**RODB/BCC/NOC**	**AFTN/AMHS Adress**
1	2	3	4	5	6	7	8
PRETORIA	FAPR	SAAP31	FAOR	Johannesburg	H+10	Addis Ababa	HAZZYPYX
			FACT	Cape Town		Antananarivo	FMZZYPYB
			FALE	*Durban/King Shaka*		Nairobi	HKZZYPBX
			FAEL	East London		Dakar	GOOYYZYZ
			FAGG	George		Dakar	GOZZSNGX
			FAHS	*Hoedspruit*		Johannesburg	FAORYMYX
			FAKM	Kimberley		**Pretoria**	**FAPRYMYX**
			FAKN	*Kruger*		Toulouse	LFZZMAFI
			FADN	*Mpumalanga*		Rio de Janeiro	SBGLYMYX
				Durban/International			
						Bangkok	VTBDYMYX
		SAAP32	FALA	Lanseria		Jeddah	OEJNYMYX
			FAMM	Mafikeng			
			FALM	*Makhado*			
			FAUT	*Mthatha*			
			FANS	Nelspruit			
			FAPI	Pietersburg			
			FAPN	*Pilanesberg*			
			FAPP	*Polokwane*			
		SAAP33	FAPE	Port Elizabeth			
			FAGM	*Rand*			
			FAUP	Upington			
			FAWK	*Waterkloof*			
			FAWB	*Wonderboom*			
			FBSK	Gaborone			
			FBFT	Francistown			
			FBKE	Kasane			
			FBMN	Maun			
		SAAP34	FBSP	Selibe-Phikwe			
			FVHA	Harare			
			FVCZ	*Buffalo Range*			
			FVWN	*Hwange*			
			FVBU	J.M. Nkomo			
			FVKB	*Kariba*			
			FVMV	*Masvingo*			
			FVFA	Victoria Falls			
		SAAP35	FWKI	Lilongwe			
			FWCL	Blantyre/Chileka			
			FLKK	Lusaka/Keneth K.			
			FLHN	Livingstone/Harry N			
			FLMF	Mfuwe			
			FLSK	Ndola/Simon			

			FDMS	Kapwe Manzini			

RODB/BCC		**METAR BULLETIN**				**DISSEMINATION TO**	
Name	**CCCC**	**Bul. Id.**	**CCCC**	**Aerodrome**	**Prepar.**	**RODB/BCC/NOC**	**AFTN/AMHS Adress**
1	2	3	4	5	6	7	8
PRETORIA	FAPR	SAAP36	FQBR FQMA *FQCH* *FQIN* *FQLC* FQNP *FQPB* *FQQL* *FQTT* *FQVL*	Beira Maputo *Chimoi* *Inhambane* *Lichinga* Nampula *Pemba* *Quelimane* *Tete Chingodzi* *Vilankilo*	H+10	Addis Ababa Antananarivo Nairobi Dakar Dakar Johannesburg **Pretoria** Toulouse Rio de Janeiro Bangkok Jeddah	HAZZYPYX FMZZYPYB HKZZYPBX GOOYYZYZ GOZZSNGX FAORYMYX **FAPRYMYX** LFZZMAFI SBGLYMYX VTBDYMYX OEJNYMYX
		SAAP37	FXMM FYWH FYGF *FYOA* *FYWE* FYKT FYWB	Maseru Windhoek/Hosea Kut Groorfontein *Ondangwa* *Windhoek*/Eros Keetmanshoop Walvis Bay			
NAIROBI	HKNA	SAEA32	HKJK HKMO HKEL HKKI HTDA HTZA HTKJ HSSJ HBBA	Nairobi Mombasa Eldoret Kisumu Dar-Es-Salaam Zanzibar Kilimanjaro Juba Bujumbura	H+10	Addis Ababa Antananarivo **Pretoria** Brazzaville Niamey Dakar Dakar Nairobi	HAABYPYX FMZZYPYB **FAPRYMYX** FCZZXLBX DRZZNAZX GOOYYZYZ GOZZSNGX HKZZYPBX
		SAEA35	HUEN HRYR *HRZA* HCMM HCMI HCMV HCMH HCMK	Entebbe Kigali *Kamembe* Mogadishu Berbera Burao Egal Kisimayu			

RODB/BCC		**METAR BULLETIN**				**DISSEMINATION TO**	
Name	**CCCC**	**Bul. Id.**	**CCCC**	**Aerodrome**	**Prepar.**	**RODB/BCC/NOC**	**AFTN/AMHS Adress**
1	2	3	4	5	6	7	8
NIAMEY	DRRN	SAAO20	DRRN	Niamey	H+10	Addis Ababa	HAZZYPYX
			DRZA	Agades		Brazzaville	FCZZXLBX
			DRRM	*Maradi*		**Dakar**	**GOOYYZYZ**
			DRRT	*Tahoua*		Dakar	GOZZSNGX
			DRZR	Zinder		Pretoria	FAPRYMYX
			DGAA	Accra		Nairobi	HKZZYPBX
			DGTK	*Takoradi*		Niamey	DRZZNAZX
			DGSI	Kumasi			
			DGLE	Tamale			
		SAAO21	DNKN	Kano			
			DNMM	Lagos			
			DNAA	Abuja/Nnamdi			
			DNAK	Akure			
			DNBE	*Benin*			
			DNCA	Calabar/Margaret			
			DNEN	*Enugu/Akanu*			
			DNGO	*Gombe*			
		SAAO22	*DNIB*	*Ibadan*			
			DNIL	Ilorin			
			DNIM	*Imo/Sam*			
			DNJO	*Jos*			
			DNKA	Kaduna			
			DNKT	*Katsina*			
			DNMA	Maiduguri			
			DNMN	*Minna*			
		SAAO23	*DNSU*	*Osubi*			
			DNPO	Port Harcourt			
			DNSO	Sokoto/Saddiq			
			DNYO	*Yola*			
			DNZA	*Zaria*			
			DXXX	Lome			
			DXNG	Niamtougou			
			DXSK	*Sokode*			
		SAAO24	DBBB	Cotonou			
			FTTJ	N'djamena			
			FTTC	*Abeche*			
			FTTY	*Faya Largeau*			
			FTTD	*Moundou*			
			FTTA	*Sarh*			
			DFOO	Bobo Dioulasso			
			DFFD	Ouagadougou			

APPENDIX B

AMBEX COLLECTION AND DISSEMINATION OF LONG TAF (FT) BULLETINS

Table B : FT TAF

Explanation of the Table

Column

1: Name of the BCC or RODB compiling the bulletin.

2. ICAO location indicator of the BCC or RODB.

3. Bulletin identifier- The identifier to be used in the WMO abbreviated heading of AMBEX TAF (FT) bulletins prepared by the BCC in Column 1.

4. ICAO location indicator of the aerodrome forming part of the collection area of the BCC in Column 1.

5. Name of the aerodrome forming part of the collection area of the BCC in Column 1.

6. Bulletin Filing Time -The latest filing times for AMBEX bulletins containing TAFs with the validities listed in Column 8.

7. Start of validity period

8. TAF validity

9. Distribution of the bulletin to other RODBs, BCCs, and corresponding NOCs – Name of the main RODB in **bold**.

10. Distribution of the bulletin to other AMBEX centres and RODBs – AFTN/AMHS address of the AMBEX/RODB Centre

Notes: 1 Aerodromes with shaded text are included in the HF VOLMET Broadcast
2 The RODB responsible for storing the bulletin is in **bold**
3 Non-AOP aerodeomes indicated in *italics*

RODB/BCC		**TAF BULLETIN**						**DISSEMINATION TO**	
Name	**CCCC**	**Bul. Id.**	**CCCC**	**Aerodrome**	**Filing Time**	**Start of validity**	**TAF validit**	**RODB/BCC/ NOC**	**AFTN/AMHS Adress**
1	2	3	4	5	6	7	8	9	10
ADDIS ABABA	HAAB	FTEA31	HAAB	Addis Ababa	0500 1100 1700 2300	0600 1200 1800 0000	30h	Addis Ababa Nairobi Dakar Brazzaville Niamey Antananarivo **Pretoria** Dakar Jeddah	HAABYMYX HKZZYPBX GOZZSNGX FCZZXLBX DRZZNAZX FMZZYPYB **FAPRYMYX** GOOYYZYZ OEJDYPYX
		FTEA39	HHAS *HHMS* HADR HDAM	Asmara *Massawa* Dire Dawa Djibouti/Ambouli	0500 1100 1700 2300	0600 1200 1800 0000	24h		
ANTANANARIVO	FMMI	FTI031	FMMI FIMP FMEE	Antananarivo Mauritius Saint-Denis	0500 1100 1700 2300	0600 1200 1800 0000	30h	Antananarivo Dakar Nairobi Addis Ababa **Pretoria** Nairobi Dakar	FMZZYPYB GOOYYZYZ HKZZYPBX HAZZYPYX **FAPRYMYX** HKZZYPBX GOZZSNGX
		FTI039	FMNM FMMT FMCH *FJDG* *FIMR* FSIA	Mahajanga Toamasina Moroni *Diego Garcia* *Rodrigues* Seychelles/Mahe	0500 1100 1700 2300	0600 1200 1800 0000	24h		
BRAZZAVILLE	FCBB	FTAM31	FCBB FEFF FKKD FZAA FOOL FPST FGSL FNLU	Brazzaville Bangui Douala Kinshasa Libreville Sao Tome Malabo Luanda	0500 1100 1700 2300	0600 1200 1800 0000	30h	**Dakar** Niamey Addis Ababa Pretoria Dakar Nairobi	**GOOYYZYZ** DRZZNAZX HAZZYPYX FAPRYMYX GOZZSNGX HKZZYPBX
		FTAM39	FCPP FKYS FOOG	Pointe Noire Yaounde Port Gentil	0500 1100 1700 2300	0600 1200 1800 0000	24h		

RODB/BCC		**TAF BULLETIN**						**DISSEMINATION TO**	
Name	**CCCC**	**Bul. Id.**	**CCCC**	**Aerodrome**	**Filing Tiùme**	**Start of validity**	**TAF validit**	**RODB/BCC/ NOC**	**AFTN/AMHS Adress**
1	2	3	4	5	6	7	8	9	10
DAKAR	GOOY	FTAO30	GOOY GBYD GABS GFLL GUCY GQNN DIAP GVAC	Dakar Banjul Bamako Freetown Conakry Nouakchott Abidjan Sal	0500 1100 1700 2300	0600 1200 1800 0000	30h	Antananarivo Niamey Pretoria Brazzaville Dakar Nairobi Addis Ababa Toulouse **Dakar**	FMZZYPYB DRZZNAZX FAPRYMYX FCZZXLBX GOZZSNGX HKZZYPBX HAZZYPYX LFZZMAFI **GOOYYZYZ**
		FTAO35	GOGS GOSS GLRB GQPP GGOV GAGO *FHAW* *GVBA* *GVSV* *DIYO*	Cap Skiring Saint Louis Monrovia Nouadhibou Bissau Gao *Ascension I.* *Rabil/Boa Vista* *Sao Pedro/Sao V* *Yamoussoukro*	0500 1100 1700 2300	0600 1200 1800 0000	24h		
PRETORIA	FAPR	FTAP32	FAOR FACT FADN FBSK FVHA FWKI FLKK FQMA FYWH	Johannesburg Cape Town Durban Interna Gaborone Harare Lilongwe Lusaka/Keneth Maputo Windhoek/Hose a	0500 1100 1700 2300	0600 1200 1800 0000	30h	Dakar Addis Ababa Antananarivo Brazzaville Dakar Nairobi Toulouse **Pretoria** Rio de Janeiro Bangkok Jeddah	GOZZSNGX HAZZYPYX FMZZYPYB FCZZXLBX GOOYYZYZ HKZZYPBX LFZZMAFI **FAPRYMYX** SBGLYMYX VTBDYMYX OEJNYMYX
		FTAP38	FQBR *FQCH* *FQIN* *FQLC* FQNP *FQPB* *FQQL* *FQTT* *FQVL*	Beira *Chimoi* *Inhambane* *Lichinga* Nampula *Pemba* *Quelimane* *Tete Chingodzi* *Vilankilo*	0500 1100 1700 2300	0600 1200 1800 0000	24h		
		FTAP39	FAPE *FALE* FDMS FXMM FALA	Port Elizabeth *Durban/King* Manzini Maseru Lanseria					

			FAUP	Upington					

RODB/BCC		**TAF BULLETIN**						**DISSEMINATION TO**	
Name	**CCCC**	**Bul. Id.**	**CCCC**	**Aerodrome**	**Filing Tiùme**	**Start of validity**	**TAF validit**	**RODB/BCC/ NOC**	**AFTN/AMHS Adress**
1	2	3	4	5	6	7	8	9	10
NAIROBI	HKNA	FTEA32	HKJK HTDA HUEN	Nairobi Dar-Es-Salaam Entebbe	0500 1100 1700 2300	0600 1200 1800 0000	30h	Addis Ababa Antananarivo **Pretoria**	HAABYPYX FMZZYPYB **FAPRYMYX**
		FTEA39	HKMO HKEL HKKI HTKJ HTZA HBBA HRYR *HRZA* HCMM	Mombasa Eldoret/Intl. Kisumu Kilimanjaro Zanzibar Bujumbura Kigali *Kamembe* Mogadishu	0500 1100 1700 2300	0600 1200 1800 0000	24h	Brazzaville Dakar Niamey Dakar	FCZZXLBX GOZZSNGX DRZZNAZX GOOYYZYZ
NIAMEY	DRRR	FTAO20	DRNN DGAA DBBB DNKN DNMM DNAA DNPO DXXX FTTJ DFFD	Niamey Accra Cotonou Kano Lagos Abuja/Nnamdi Port Harcourt Lome N'djamena Ouagadougou	0500 1100 1700 2300	0600 1200 1800 0000	30h	Addis Ababa Brazzaville **Dakar** Pretoria Nairobi Dakar	HAZZYPYX FCZZXLBX **GOOYYZYZ** FAPRYMYX HKZZYPBX GOZZSNGX
		FTAO24	DFFD *DGTK* DGSI *DNAK* *DNBE* DNCA *DNEN* *DNGO* *DNIB* DNIL	Bobo Dioulasso *Takoradi* Kumasi *Akure* *Benin* Calabar/Margaret *Enugu/Akanu* *Gombe* *Ibadan* Ilorin	0500 1100 1700 2300	0600 1200 1800 0000	24h		
		FTAO35	*DNIM* *DNJO* DNKA *DNKT* DNMA *DNMN* *DNSU*	*Imo/Sam* *Jos/Yakubu* Kaduna *Katsina* Maiduguri *Minna* *Osubi*					

			DNSO *DNYO* DXNG	Sokoto/Saddiq *Yola* Niamtougou					

APPENDIX C

WMO ABBREVIATED HEADINGS

(for use in AMBEX messages and bulletins)

1. Each AMBEX bulletin should have a WMO abbreviated heading in accordance with WMO No. 386, Manual on the Global Telecommunication System, Part II – Operational Procedures for the GTS. The symbolic form of the WMO abbreviated heading is as follows:

TTAAii CCCC YYGGgg (BBB)

2. Explanation of symbols

2.1. TTAAii - TT - This group is used in accordance with WMO No. 386, Manual on the Global Telecommunication System, Part II – Operational Procedures for the GTS, Attachment II-5.

2.1.1 **TT** - Data type designator, used for OPMET data as follows:

Data Type	Abbreviated Name	WMO data type designator TT
Aerodrome reports	METAR SPECI	SA SP
Aerodrome forecasts	TAF: 24 and 30 hour 9 and 12 hour	FT FC
SIGMET information	SIGMET SIGMET for TC SIGMET for VA	WS WC WV
Volcanic ash and tropical cyclone advisories	VAA TCA	FV FK
Air-reports	AIREP	UA
Administrative	ADMIN	NO

2.1.2 **AA** - Geographical designator, composed of two letters. according to WMO No. 386, Manual on the Global Telecommunication System, Part II – Operational Procedures for the GTS, Attachment II-5, Table C1. The following principles shall apply:

a) For AMBEX bulletins containing OPMET data from a single State or territory, the AA designator should be chosen from Table C1, Part I – Country or territory designators;

b) For AMBEX bulletins containing OPMET data from more than one State or territory, a suitable AA designator should be chosen from Table C1, Part II – Area Designators;

c) The part of the Table C1, Part II – Area Designators, which is relevant to the AMBEX scheme is reproduced bellow.

2.1.3 In OPMET messages prepared by offices other than BCCs for transmission to BCCs, the following WMO geographical designators (AA) should be used:

WMO Country or Territory Designators

Aerodrome		AA	AMBEX CENTRE
Name	**Type**		
Abeche	NAOP	CD	Aerodrome
Abidjan	AOP	IV	NOC
Abuja/Nnamdi	AOP	NI	Aerodrome
Accra	AOP	GH	NOC
Addis Ababa	AOP	ET	BCC
Agades	AOP	NR	Aerodrome
Akure	NAOP	NI	Aerodrome
Annaba	AOP	AL	Aerodrome
Antananarivo	AOP	MG	BCC
Antsiranana	AOP	MG	Aerodrome
Ascension I	NAOP	UK	NOC
Asmara	AOP	EI	NOC
Assab	AOP	ET	Aerodrome
Atar	AOP	MT	Aerodrome
Bamako	AOP	MI	NOC
Bangui	AOP	CE	NOC
Banjul	AOP	GB	NOC
Bata	NAOP	GQ	Aerodrome
Beira	AOP	MZ	Aerodrome
Benin	NAOP	NI	Aerodrome
Berbera	AOP	SI	Aerodrome
Berberati	AOP	CE	Aerodrome
Bissau	AOP	GW	NOC
Blantyre/Chileka	AOP	MW	Aerodrome
Bobo Dioulasso	AOP	HV	Aerodrome
Bouake	AOP	IV	Aerodrome
Brazzaville	AOP	CG	BCC
Buffalo Range	NAOP	ZW	Aerodrome
Bujumbura	AOP	BI	NOC
Burao	AOP	SI	Aerodrome
Calabar/Margaret	AOP	NI	Aerodrome
Cap Skiring	AOP	SG	Aerodrome
Cape Town	AOP	ZA	Aerodrome
Chimoi	NAOP	MZ	Aerodrome
Conakry	AOP	GN	NOC
Cotonou/Cardinal B C.	AOP	BJ	NOC
Dakar	AOP	SG	RODB
Dar-es-Salaam	AOP	TN	NOC
Diego Garcia	NAOP	UK	NOC
Dire Dawa	AOP	EI	Aerodrome
Djibouti/Ambouli	AOP	DJ	NOC
Douala	AOP	CM	NOC
Durban/King Shaka	NAOP	ZA	Aerodrome
Durban/International	AOP	ZA	Aerodrome
Dzaoudzi	NAOP	MG	Aerodrome
East London	NAOP	ZA	Aerodrome
Egal	AOP	SI	Aerodrome
Eldoret	AOP	KN	Aerodrome
Entebbe	AOP	UG	NOC
Enugu/Akanu	NAOP	NI	Aerodrome
Faya Largeau	NAOP	CD	Aerodrome
Franceville	AOP	GO	Aerodrome
Francistown	AOP	BC	Aerodrome
Freetown	AOP	SL	NOC
Gaborone	AOP	BC	NOC
Gao	AOP	MI	Aerodrome
Garoua	AOP	CM	Aerodrome
George	AOP	ZA	Aerodrome
Goma	AOP	ZR	Aerodrome
Gombe	NAOP	NI	Aerodrome
Harare	AOP	ZW	NOC
Hoedspruit	NAOP	ZA	Aerodrome
Hosea Kutako	NAOP	NM	Aerodrome
Huambo	AOP	AN	Aerodrome
Hwange	NAOP	ZW	Aerodrome
Ibadan	NAOP	NI	Aerodrome
Ilorin	AOP	NI	Aerodrome
Imo/Sam	NAOP	NI	Aerodrome
Inhambane	NAOP	MZ	Aerodrome
J.M. Nkomo	AOP	ZW	Aerodrome
Johannesburg	AOP	ZA	NOC
Jos	NAOP	NI	Aerodrome
Juba	AOP	SU	NOC
Kaduna	AOP	NI	Aerodrome
Kamembe	NAOP	RW	Aerodrome
Kankan	AOP	GN	Aerodrome
Kano	AOP	NI	Aerodrome
Kaolack	NAOP	SG	Aerodrome
Kariba	NAOP	ZW	Aerodrome
Kasane	AOP	BC	Aerodrome
Katsina	NAOP	NI	Aerodrome
Kayes	AOP	MI	Aerodrome
Kedougou	NAOP	SG	Aerodrome
Keetmanshoop	AOP	NM	Aerodrome
Kidal	AOP	MI	Aerodrome
Kigali	AOP	RW	NOC
Kilimanjaro	AOP	TN	Aerodrome
Kimberley	AOP	ZA	Aerodrome
Kinshasa	AOP	ZR	NOC
Kisangani	AOP	ZR	Aerodrome
Kisimayu	AOP	SI	Aerodrome
Kisumu	AOP	KN	Aerodrome
Kruger Mpumalanga	NAOP	ZA	Aerodrome
Kumasi	AOP	GH	Aerodrome
Labe	AOP	GN	Aerodrome
Lagos	AOP	NI	NOC
Lanseria	AOP	ZA	Aerodrome
Libreville	AOP	GO	NOC
Lichinga	NAOP	MZ	Aerodrome
Lilongwe	AOP	MW	NOC

Livingstone/Harry N	AOP	ZB	Aerodrome
Lome	AOP	TG	NOC
Luanda	AOP	AN	NOC
Lubumbashi	AOP	ZR	Aerodrome
Lusaka/Keneth K.	AOP	ZB	NOC
Mafikeng	AOP	ZA	Aerodrome
Mahajanga	AOP	MG	Aerodrome
Mahe/Seychells	AOP	SC	NOC
Maiduguri	AOP	NI	Aerodrome
Makhado	NAOP	ZA	Aerodrome
Malabo	AOP	GQ	NOC
Manzini	AOP	SV	NOC
Maputo	AOP	MZ	NOC
Maradi	NAOP	NR	Aerodrome
Maroua/Salak	AOP	CM	Aerodrome
Maseru	AOP	LS	NOC
Massawa	NAOP	ET	Aerodrome
Masvingo	NAOP	ZW	Aerodrome
Maun	AOP	BC	Aerodrome
Mauritius	AOP	MA	NOC
Mbuji-Mayi	AOP	ZR	Aerodrome
Mfuwe	AOP	ZB	Aerodrome
Minna	NAOP	NI	Aerodrome
Mogadishu	AOP	SI	NOC
Mombasa	AOP	KN	Aerodrome
Monrovia	AOP	LI	NOC
Mopti	AOP	MI	Aerodrome
Moroni	AOP	IC	NOC
Moundou	NAOP	CD	Aerodrome
Mthatha	NAOP	ZA	Aerodrome
Nairobi	AOP	KN	BCC
Nampula	NAOP	MZ	Aerodrome
N'Djamena	AOP	CD	NOC
Ndola/Simon Kapwe	AOP	ZB	Aerodrome
Nelspruit	AOP	ZA	Aerodrome
Nema	AOP	MT	Aerodrome
N'gaoundere	AOP	CM	Aerodrome
Niamey	AOP	NR	BCC
Niamtougou	AOP	TG	Aerodrome
Nioro	AOP	MI	Aerodrome
Nosy-Be	AOP	MG	Aerodrome
Nouadhibou	AOP	MT	Aerodrome
Nouakchott	AOP	MT	NOC
N'zerekore	AOP	GN	Aerodrome
Ondangwa	NAOP	NM	Aerodrome
Osubi	NAOP	NI	Aerodrome
Ouagadougou	AOP	HV	NOC
Pemba	NAOP	MZ	Aerodrome
Pietersburg	AOP	ZA	Aerodrome
Pilanesberg	NAOP	ZA	Aerodrome
Pointe Noire	AOP	CG	Aerodrome
Polokwane	NAOP	ZA	Aerodrome
Port Elizabeth	AOP	ZA	Aerodrome
Port Gentil	AOP	GO	Aerodrome
Port Harcourt	AOP	NI	Aerodrome
Praia	AOP	CV	Aerodrome
Pretoria	AOP	ZA	RODB
Quelimane	NAOP	MZ	Aerodrome
Rabil/Boa Vista	NAOP	CV	Aerodrome
Rand	NAOP	ZA	Aerodrome
Rodrigues	NAOP	MA	Aerodrome
Saint Louis	AOP	SG	Aerodrome
Saint Pierre	NAOP	FR	Aerodrome
Saint-Denis	AOP	RE	NOC
Sainte-Marie	AOP	MG	Aerodrome
Sal/Amilcar Cabral	AOP	CV	NOC
Sao Pedro/Sao Vicente	NAOP	CV	Aerodrome
Sao Tome	AOP	TP	NOC
Sarh	NAOP	CD	Aerodrome
Selibe-Phikwe	AOP	BC	Aerodrome
Sokode	NAOP	TG	Aerodrome
Sokoto/Saddiq	AOP	NI	Aerodrome
Tahoua	NAOP	NR	Aerodrome
Takoradi	NAOP	GH	Aerodrome
Tamale	AOP	GH	Aerodrome
Tambacounda	AOP	SG	Aerodrome
Tete Chingodzi	NAOP	MZ	Aerodrome
Toamasina	AOP	MG	Aerodrome
Tolagnaro	AOP	MG	Aerodrome
Tombouctou	AOP	MI	Aerodrome
Upington	AOP	ZA	Aerodrome
Victoria Falls	AOP	ZW	Aerodrome
Vilankilo	NAOP	MZ	Aerodrome
Walvis Bay	AOP	NM	Aerodrome
Waterkloof	NAOP	ZA	Aerodrome
Windhoek/Hosea K. It	AOP	NM	NOC
Wonderboom	NAOP	ZA	Aerodrome
Yamoussoukro	NAOP	IV	Aerodrome
Yaounde	AOP	CM	Aerodrome
Yola	NAOP	NI	Aerodrome
Zanzibar	AOP	TN	Aerodrome
Zaria	NAOP	NI	Aerodrome
Ziguinchor	AOP	SG	Aerodrome
Zinder	AOP	NR	Aerodrome
Zoueratt	AOP	MT	Aerodrome

RODBs are also a BCC;
BCCs are also NOCs; and
NOCs are also aerodromes.
AOP: aerodrome listed in AFI Table AOP 1
NAOP: not listed in AFI AOP table AOP 1

2.1.4 In bulletins prepared by BCCs, the following geographical designators should be used:

BCC	AA	BCC	AA
Addis Ababa	EA	Pretoria	AP
Antananarivo	IO	Nairobi	EA
Brazzaville	AM	Niamey	AO
Dakar	AO		

2.1.5 **ii** Number used to differentiate two or more bulletins which contain data in the same code and which originate from the same geographical area and from the same originating centre. It shall be a number with a maximum of two digits. The IROGs may use numbers 36 to 38. The numbers 31 to 35, 39 shall be used in AMBEX bulletins for purposes other than those of IROGfunctions. .

2.2 **CCCC:** ICAO location indicator of location preparing the AMBEX bulletin (BCCs) or AMBEX messages (offices other than BCCs).

2.3. **YYGGgg**: Date-time group. To be used as follows:

2.3.1 YY - Day of the month

2.3.2 GGgg - hours and minutes.

For METAR bulletins/messages: the standard time of observation in UTC.

For TAF bulletins: the full hour in UTC (the last two digits shall be 00) preceding the transmission time.

For all other bulletin/messages - the time of compilation in UTC.

2.4. BBB - Optional group indicating an amended, corrected or delayed bulletin.

2.4.1 An abbreviated heading defined by TTAAii CCCC YYGGgg shall be used only once. Consequently, if this abbreviated heading has to be used again for an addition, a correction or an amendment, it shall be mandatory to add an appropriate BBB indicator, which shall be added after the date-time group. The indicator BBB shall be used as defined below:

- RRx – for delayed routine meteorological messages/bulletins;

- CCx – for corrections to previously relayed messages/bulletins;

- AAx – for amendments to TAF messages/bulletins;

- Pxx – for segmenting a large set of information into several bulletins.

Note 1: *The "x" above is an alphabetic character of A through X, indicating the sequential number of the irregular bulletin of certain type. For instance, for amended TAFs, AAA is used for the first amendment, AAB for the second, AAC for the third, etc; for delayed METARs or TAFs, RRA is used for the first delayed message, RRB for the second, etc.; and, for corrections to any OPMET bulletin, CCA is used for the first correction, CCB for the second, etc.*

Note 2: *The use of the third letter A, B, C, etc. permits differentiation between bulletins/messages with the same type of information of the original bulletin/message. For example, assuming that a certain bulletin had the following abbreviated heading: "FTA031 DIAP 281000", a delayed bulletin containing TAF(s) which are missing from the original bulletin will bear the heading: "FTA033 DRRN*

281000 RRA"; and a second delayed bulletin, containing additional missing TAF(s) will bear the heading: "FTA031 DIAP 281000 RRB".

Note 3: *The following data designators should be used by BCCs*:

BCC	TAF	METAR
Addis Ababa	FTEA31 HAAB FTEA39 HAAB	SAEA31
Antananarivo	FTIO31 FMMI FTIO39 FMMI	SAIO31 SAIO34
Brazzaville	FTAM31 FCBB FTAM39 FCBB	SAAM31 SAAM34 SAAM36
Dakar	FTAO30 GOOY FTAO35 GOOY	SAAO30 SAAO31 SAAO32 SAAO33 SAAO34
Pretoria	FTAP32 FAOR FTAP38 FAOR FTAP39 FAOR	SAAP31 SAEA32 SAEA35 SAEA33 SAAP34 SAEA35 SAEA36 SAEA37
Nairobi	FTEA32 HKNA FTEA39 HKNA	SAEA32 SAEA35
Niamey	FTAO20 DRRN FTAO24 DRRN FTAO26 DRRN	SAAO20 SAAO21 SAAO22 SAAO23 SAAO24

APPENDIX D

EXCHANGE OF OPMET DATA BETWEEN THE AFI, EUR, MID AND ASIA REGION

IROGs RESPONSIBILITIES

1. DAKAR IROG

1.1. Outgoing responsibilities

1.1.1 The whole set of METAR, TAF, AIREP SPECIAL and SIGMET bulletins, as described in appendices A, B, C and D of this Handbook, received by RODB DAKAR shall be distributed to Rio de Janeiro and ROC Toulouse, which shall send them to the EUR ROCs deserving other adjacent regions and to the SADIS.

1.2. Incoming responsibilities

1.2.1 The bulletins containing the required international OPMET data as indicated in the FASID Table MET 1A (or 2A) shall be sent by Rio de Janeiro, Jedda and ROC Toulouse to IROG DAKAR, that shall send the bulletins following the States requirements.

1.2.2 Regular contacts with the adjacent IROG (s) shall insure the efficiency of the data exchange. A list of exchanged bulletins should be agreed and updated, as necessary.

2. PRETORIA IROG

2.1. Outgoing responsibilities

2.1.1 The whole set of METAR, TAF, AIREP SPECIAL and SIGMET bulletins, as described in appendices A, B, C and D of this Handbook received by RODB Pretoria shall be distributed to Rio de Janeiro, Jeddah, Bangkok and ROC Toulouse, that shall send to the EUR ROCs deserving other adjacent regions and to the SADIS

2.2. Incoming responsibilities

2.2.1 The bulletins containing the required international OPMET data as indicated in the FASID table MET 1A (or 2A) shall be sent by Rio de Janeiro, Jedda, Bangkok and ROC Toulouse to IROG PRETORIA, that shall send the bulletins following the States requirements.

2.2.2 Regular contacts with the adjacent IROG(s) should insure the efficiency of the data exchange. A list of exchanged bulletins should be agreed and updated, as necessary

APPENDIX E

AFI REGIONAL OPMET DATA BANKS AND SIGMET REQUIREMENTS

The AFI Regional OPMET Data Banks (RODBs) and the AFTN/AMHS address to be used for direct access to the banks are shown below:

RODB	AFTN/AMHS Address	AMBEX Centres of Responsibility
Dakar	GOOYYZYZ	, Brazzaville/FCBB Dakar/GOOO Niamey/DRNN
Pretoria	FAPRYMYX	Addis Ababa/HAAB, Antananarivo/FMMI Pretoria/FAPR (Johannesburg/ (FAOR)**) Nairobi/HKNA ** BCC located at South African Weather Service HQ.

Responsibilities:

Collect OPMET bulletins from AMBEX centres and store them in the data base;

Handle all types of required OPMET bulletins;

Provide facilities for "request-reply" service to authorized users;

Maintain a catalogue of bulletins and introduce changes to the bulletins when necessary according to established procedures;

Quality control the incoming bulletings and inform AMBEX centres on any deficiencies. Derive action plans where deficiencies are monitored.

Monitor the OPMET traffic by carrying on regular test on the availability and timeliness of the bulletins; Derive action plans where deficiencies are monitored and report to the ICAO Regional Office on the results.

APPENDIX E-1

WMO HEADINGS FOR SIGMET BULLETINS USED BY AFI METEOROLOGICAL WATCH OFFICES (MWOs)

EXPLANATION OF THE TABLE

Col 1: State and name of the MWO

Col 2: ICAO location indicator of the MWO

Col 3: $T_1T_2A_1A_2$ii group of the WMO heading for the WS SIGMET bulletin

Col 4: $T_1T_2A_1A_2$ii group of the WMO heading for the WC SIGMET bulletin (tropical cyclone)

Col 5: $T_1T_2A_1A_2$ii group of the WMO heading for the WV SIGMET bulletin (volcanic ash)

Col 6: ICAO location indicator of the FIR/CTA served by the MWO

Col 7: Remarks

WMO HEADINGS FOR SIGMET BULLETINS
USED BY AFI METEOROLOGICAL WATCH OFFICES

MWO Location	ICAO location indicator	WMO SIGMET Headings			FIR/ACC served	Remarks
		WS	WC	WV	ICAO location indicator	
1	2	3	4	5	6	7
ANGOLA LUANDA/4 de Fevereiro	FNLU	WSAN31		WVAN31	FNAN	
BOTSWANA GABORONE/Sir Seretse Khama	FBSK	WSBC31	WCBC31	WVBC31	FBGR	
BURUNDI BUJUMBURA/Bujumbura	HBBA	WSBI31		WVB131	HBBA	
CAPE VERDE SAL I/Amilcar Cabral	GVAC	WSCV31		WVCV31	GVSC	
CHAD N'DJAMENA/N'djamena	FTTJ	WSCD31		WVCD31	FTTT	
CONGO BRAZZAVILLE/Maya-Maya	FCBB	WSCG31		WVCG31	FCCC	
D.R. CONGO KINSHASA/N'Djili	FZAA	WSZR31	WCZR31	WVZR31	FZAA	
ETHIOPIA ADDIS ABABA/Bole Intl	HAAB	WSET31		WVET20	HAAA	
ERITREA ASMARA	HHAS	WSEI31		WVEI31	HHAA	
GHANA ACCRA/Kotoka Int'l	DGAA	WSGH31		WVGH31	DGAC	
KENYA KENYA/Jomo Kenyatta Int'l	HKJK	WSKN31	WCKN31	WVKN31	HKNA	
LIBERIA MONROVIA/Roberts Int'l	GLRB	WSLI31		WVSL31	GLRB	
MADAGASCAR ANTANANARIVO/Ivato	FMMI	WSMG31	WCMG20	WVMG20	FMMM	
MALAWI LILONGWE/Lilongwe Int'l	FWKI	WSMW31	WCMW31	WVMW31	FWLL	

MWO Location	ICAO location indicator	WMO SIGMET Headings			FIR/ACC served	Remarks
		WS	WC	WV	ICAO location indicator	
1	2	3	4	5	6	7
MAURITIUS MAURITIUS/Sir Seewoosagur Ramgoolam Int'l	FIMP	WSMA31		WVMA31	FIMM	
MOZAMBIQUE MAPUTO/Maputo Int'l	FQMA	WSMZ31	WCMZ20	WVMZ31	FQBE	
NAMIBIA WINDHOEK/Hosea Kutako	FYWH	WSNM31		WVNM31	FYWH	
NIGER NIAMEY/Diori Hmani Int'l	DRRN	WSNR31		WVNR31	DRRR	
NIGERIA KANO/Mallam Aminu Kano Int'l	DNKN	WSNI31		WVNI31	DNKK	
RWANDA KIGALI/Gregoire Kayibanda	HRYR	WSRW31		WVRW31	HRYR	
SENEGAL Leopold Sedar Senghor	GOOY	WSSG31		WVSG31	GOOO	
SEYCHELLES MAYE/Seychelles Int'l	FSIA	WSSC31	WCSC20	WVSC31	FSSS	
SOMALIA MOGADISHU/Mogadishu	HCMM	WSSI31		WVSI31	HCSM	
SOUTH AFRICA JOHANNESBURG/Johannesburg	FAOR	WSZA31	WCZA31	WVZA31	FACA FAJA FAJO	
UGANDA ENTEBBE/Entebbe Int'l	HUEN	WSUG31		WVUG31	HUEC	
UNITED REPUBLIC OF TANZANIA DAR-ES-SALAAM/Dar-es-Salaam	HTDA	WSTN31	WCTN31	WVTN31	HTDC	
ZAMBIA Keneth Kaunda/Lusaka Int'l	FLKK	WSZB31		WVZB31	FLFI	
ZIMBABWE HARARE/Harare	FVHA	WSZW31	WCZW31	WVZW31	FVHA	

APPENDIX F

OPMET Quality Control and Monitoring Procedures

1 Quality Control Procedures

1.1 OPMET Data Validation

1.1.1 The AMBEX Centres and RODBs should not modify the content of the meteorological data, e.g. visibility, QNH etc., but only items contained in the WMO bulletin headings, such as, location indicators or observation times.

1.1.2 WMO Abbreviated Heading (TTAAii CCCC YYGGgg BBB) Validation

TT	Message Type, shall comprise two alphabetical characters
AA	Location Indicator, shall comprise two alphabetical characters
ii	comprise two digits, from 01 to 99
CCCC	A 4-letter ICAO location indicator shall comprise 4 alphabetical characters
YYGGgg	The date time group of the bulletin, shall be configured to validate it with the current time
BBB	BBB is an optional group. The use of BBB group shall comply with the rules in the WMO abbreviated heading, in regard to delayed, corrected and amended bulletins.

Examples	After QC check
METAR with incorrect YYGGgg: SABM31 VYMD 100830 **UTC** VYMD 100830Z 18005KT 8000 FEW025 31/18 Q1000 =	 SABM31 VYMD **100830** VYMD 100830Z 18005KT 8000 FEW025 31/18 Q1000 =
TAF without AHL: 112324 WIDDYMYX TAF WIDD 112324Z 1200/1224 00000KT 4000 RA BKNT017 BECMG 1203/1205 20010KT 9000 SCT017=	 **FTID31 WIDD 112300** TAF WIDD 112324Z 1200/1224 00000KT 4000 RA BKNT017 BECMG 1203/1205 20010KT 9000 SCT017=
TAF with invalid BBB: FTBN31 OBBI 030525 **AMD** TAF AMD OBBI 030525Z 0306/0406 16010KT CAVOK BECMG 0308/0312 33017KT 5000 PROB30 TEMPO 0308/0314 0800 DU=	 FTBN31 OBBI 030525 **AAA** TAF AMD OBBI 030525Z 0306/0406 16010KT CAVOK BECMG 0308/0312 33017KT 5000 PROB30 TEMPO 0308/0314 0800 DU=

METAR/SPECI Validation

For each individual METAR or SPECI within a bulletin the following additional fields shall be validated:

Prefix checks	METAR METAR COR SPECI SPECI COR	SA SA SP SP
Observation Time YYGGggZ	The report shall have a valid date and time of observation, including the character 'Z'. In a SPECI bulletin, this group will be same as (or very close to) the YYGGgg, part of the abbreviated bulletin heading.	
End-of-message format "="	Each METAR or SPECI report shall be terminated by the "=" character.	

Examples	After QC check
METAR with Observation Time error: SAPK31 OPKC **030159** RRA OPKC **030200** 26004 8000 BKN020 27/23 Q1007 NOSIG=	 SAPK31 OPKC **030200** RRA OPKC **030200** 26004 8000 BKN020 27/23 Q1007 NOSIG=
METAR with mistyped observation time: SAID31 WADD **120100** METAR WADD **121000Z** 17004KT 9999 FEW018CB SCT120 BKN300 28/26 Q1005=	 SAXX31 WADD **120100** METAR WADD **120100Z** 17004KT 9999 FEW018CB SCT120 BKN300 28/26 Q1005=
SPECI with incorrect Message Type, TT: **SANZ31** NZKL 040000 **SPECI** NZWP 040000Z 17005KT 010V240 25KM FEW020 FEW020CB SCT035 BKN050 18/15 Q1018 NOSIG=	 **SPNZ31** NZKL 040000 AAA **SPECI** NZWP 040000Z 17005KT 010V240 25KM FEW020 FEW020CB SCT035 BKN050 18/15 Q1018 NOSIG=

1.1.4 TAF Validation

For each individual TAF within a bulletin, the following additional items shall be validated:

Prefix checks	TAF TAF COR TAF AMD	FT or FC FT or FC FT or FC
Issue Time YYGGggZ	If the field is included, it shall have a valid date and time of origin of forecast including 'Z'.	
Validity $Y_1Y_1G_1G_1/Y_2Y_2G_2G_2$	Some TAFs are still produced with a 4-digit validity period. These shall be corrected by inserting a date consistent with the current date and the date time group of the bulletin header. If a TAF is received without a validity period it shall be discarded.	
End-of-Message format "="	Each forecast shall be terminated by the "=" character.:	

Examples	After QC check
TAF with issue time error (wrong date): FCID31 WIII 181630 TAF WIII **041630Z** 0418/0503 00000KT 9000 FEW025 BECMG 0422/0424 16005KT=	 FCID31 WIII 181630 TAF WIII **181630Z** 0418/0503 00000KT 9000 FEW025 BECMG 0422/0424 16005KT=
TAF with mistyped Validity Period: FTPH31 RPLL 132200 TAF RPLC 132200Z **1400/1428** 04006KT 9999 SCT036 BKN300 TEMPO 1400/1406 02010KT 5000 –SHRA FEW020 BKN270 TX32/1405Z TN22/1421Z=	 FTPH31 RPLL 132200 TAF RPLC 132200Z **1400/1424** 04006KT 9999 SCT036 BKN300 TEMPO 1400/1406 02010KT 5000 –SHRA FEW020 BKN270 TX32/1405Z TN22/1421Z=
TAF with Validity error (wrong date): FCMS33 WMKK 170748 TAF WMKK 170700Z **3009/3018** 30005KT 9999 FEW017CB SCT140 BKN270=	 FCMS33 WMKK 170748 TAF WMKK 170700Z **1709/1718** 30005KT 9999 FEW017CB SCT140 BKN270=
TAF with 4-digit Validity period: FTXX31 WIDD 170121 TAF WIDD **0618** 06010G20KT 9999 SCT018 BECMG 1712/1714 00000KT 7000=	 FTXX31 WIDD 170121 TAF WIDD **1706/1718** 06010G20KT 9999 SCT018 BECMG 1712/1714 00000KT 7000

SIGMET Validation

CCCC on the AHL	A valid 4-letter ICAO location indicator indicating the FIR for which the SIGMET was issued	
Prefix checks	SIGMET for TS, CB, TURB, ICE, MTW, DS and SS	WS
	SIGMET for VA	WV
	SIGMET for TC	WC
Validity Period DDHHMM/DDHHMM	Shall have a valid period of validity. Validity periods may be corrected if: Missing VALID string Incorrect SIGMET number format Incorrectly formatted validity period	
Note: For SIGMET validation, please refer to the format described in the AFI (WACAF or ESAF) Regional SIGMET Guide		

Examples	After QC check
SIGMET without TTAAii: **SIGMET** OYSN 121525Z OYSC SIGMET 1 VALID 121530/122130 OYSNSANAA FIR EMBD TS OBS/FCST OVER WESTERN AND SOUTHWESTERN MOUNTAINS AND COASTAL AREAS CB TOPS FL36 NC=	 **WSXX31** OYSN 121525Z OYSC SIGMET 1 VALID 121530/122130 OYSNSANAA FIR EMBD TS OBS/FCST OVER WESTERN AND SOUTHWESTERN MOUNTAINS AND COASTAL AREAS CB TOPS FL36 NC=
SIGMET with incorrect number format WCPH30 RPLL 210445 SIGMET **NO 01** VALID 210000/210600 RPLL TC OBS N0830 E12900 ….=	 WCPH30 RPLL 210445 SIGMET **01** VALID 210000/210600 RPLL TC OBS N0830 E12900 … =
SIGMET with incorrect formatted validity period: WSIN90 VIDP 181800 VIDP SIGMET 06 VALID **18/1600** **TO 18/2000 UTC** VIDPDELHI FIR ISOL TS … = WSSD20 OEJD 220503 OEJD SIGMET 01 VALID **220500** **TO 220900** OEJN- JEDDAH FIR ….=	 WSIN90 VIDP 181800 VIDP SIGMET 06 VALID **181600/182000** VIDPDELHI FIR ISOL TS … = WSSD20 OEJD 220503 OEJD SIGMET 01 VALID **220500/220900** OEJN-JEDDAH FIR

1.2 Quality Control Methods

OPMET Data	Elements Defining	Control Methods
METAR METAR COR SPECI (SA,SP)	• AHL • Code name • Observation date/time	Software verification Manual validate Periodic Quality Control & PI Monitoring
TAF TAF AMD TAF COR (FT,FC)	AHL Code name Originating station ICAO location indicator Date/time of issue Date, time of starting, time of end of the period the forecast refers to	Software verification Manual validate Periodic Quality Control & PI Monitoring
SIGMET (WS, WC, WV)	AHL SIGMET Sequence No Date/time groups indicating the period of validity Additional Checks (recommended): Name of the FIR or the CTA the message is issued for Location indicator of the MWO originating the message	Software verification Manual validate Periodic SIGMET Quality Control Monitoring
Volcanic Ash Advisory FV	Type of message • Issue date and time Additional Checks (recommended): • Location indicator or name of the VAAC centre originating the message	Software verification Manual validate Periodic VA Quality Control Monitoring
Tropical Cyclone Advisory FK	Type of message Issue date and time Additional Checks (recommended): Location indicator or name of the TCAC centre originating the message	Software verification Manual validate Periodic TC Quality Control Monitoring

2 OPMET Monitoring

2.1 Monitoring of Scheduled OPMET data

2.1.1 Performance Indicators (PIs). The indices to be used by the RODBs are based on those developed by the European BMG for monitoring the SADIS distribution (ref. SADISOPSG/8, IP/5 – *SADIS OPMET Performance Indices*).

Compliance Index

The AMBEX Compliance index can be calculated from:

$$V_{bul\ compliance} = \frac{\text{No of reports received for a bulletin}}{\text{No of reports required for the bulletin}}$$

The Compliance Index is to assess the level of compliance to the AMBEX scheme. The determination of the compliance index is performed as follows:

Total number of reports received for AMBEX bulletin during the monitoring period, include reports in the retard bulletins.

Weed out correction and amendment bulletins, as these are re-transmitted messages, can be disregarded.

(ii) Availability Index

The availability index measures the current coverage of the OPMET distribution against the AMBEX exchange requirements. The determination of the availability index is performed on a daily basis from the data captured during the monitoring period. If at least one non-NIL report is received from the aerodrome during the 24-hour period, that aerodrome is considered to have been available. The daily availability index of a particular bulletin can be calculated as:

$$V_{bul\ availability} = \frac{\text{No of aerodromes for which one or more non-NIL data type are received}}{\text{No of aerodromes required in the bulletins}}$$

(iii) Regularity Index

The regularity index measures the consistency in the number of reports provided by an aerodrome. The computation of Regularity Index assumes that the number of report follows a normal distribution and attempts to ascertain the distribution characteristics (mean and standard deviation) from a set of data. These
characteristics are used to determine if subsequent number of reports from an aerodrome is "regular".

Denoting mean and standard deviation by μ and σ , a threshold report numbers (τ) can be established as:

$$\boldsymbol{\tau = \mu - \sigma}$$

The threshold is a reporting characteristic of an aerodrome. If the subsequent daily number of reports meets or exceeds the threshold, it is considered "regular". The daily regularity index for a bulletin can be expressed as:

$$V_{bul\ regularity} = \frac{\text{No of aerodromes for which the number of reports equals or exceeds the threshold}}{\text{No of aerodromes required in the bulletin}}$$

2.2 Monitoring of non-scheduled OPMET data

2.2.1 Monitoring of non-scheduled OPMET data should be executed for FK, FV, WC, WS, and WV types of bulletins.

2.2.2 The monitoring results should be presented in bulletin-oriented format, one line per bulletin indicating the abbreviated header (TTAAii CCCC YGGgg), the FIR/UIR where applicable, receipt time and originator.

Example non-routine OPMET monitoring result file formats:

TT	AAii	CCCC	YYGGgg	FIR/UIR Rx	Time	Origin
WS	PF21	NTAA	271004	NTTT	271004	NTAAYMYX
WS	IN90	VIDP	271000	VIDP	271007	VECCYMYX
WS	BW20	VGZR	271100	VGZR	271030	VGZRYMYX
WS	CI31	RCTP	271150	RCTP	271150	RCTPYMYX
WS	MS31	WMKK	272013	WBFC	272013	WMKKYMYX
WS	CI35	ZGGG	272225	ZGZU	272228	ZGGGYZYX
FV	AU01	ADRM	270323		270330	YMMCYMYX
FK	PQ30	RJTD	270500		270504	RJTDYMYX

Explanations to the table:

- TT: Type of bulletin FK, FV, WC, WS, WV
- AAii: Bulletin ID
- CCCC: Compiling Station
- YYGGgg: Standard time of report
- FIR/UIR: ICAO Location indicator of the FIR/UIR or blank (4 spaces) as applicable
- RxTime: Time of receipt
- Origin: Originator address.

2.2.4 Analysis of Monitoring Results:

2.2.4.1 Each RODB collects and analyses the relevant result in order to determine the effectiveness and suitability of the quality management system and to highlight any possible improvement to ICAO Regional Offices, Dakar and Pretoria.

Examples of Monitoring Results – PI Measurements

The following tables show values of Compliance, Availability and Regularity Index for ASIA/PAC OPMET bulletins compiled by Singapore RODB in March 05:

TABLE A	ROBEX Compliance Index		
	SA	FT	FC
AE31 VECC	0.81	--	
AS31 VABB	---	0.99	
AS31 VTBB	0.96	0.99	
SA32 VABB	--	0.98	
AS32 VTBB	--	0.85	
AU31 YBBN	1.00	0.99	0.97

Note: *Entry dashed out (--) means no reports of this type (SA or FT) are required*

TABLE B	Availability Index		
	SA	FT	FC

AE31 VECC	0.98	--	
AS31 VABB	---	1.00	
AS31 VTBB	0.99	1.00	
SA32 VABB	--	0.99	
AS32 VTBB	--	0.96	
AU31 YBBN	1.00	1.00	1.00
.	.	.	.
.	.	.	.

TABLE C	**Regularity Index**		
	SA	**FT**	**FC**
AE31 VECC	0.86	--	
AS31 VABB	---	0.96	
AS31 VTBB	0.93	0.96	
SA32 VABB	--	0.96	
AS32 VTBB	--	0.96	
AU31 YBBN	0.90	0.90	0.96
.	.	.	.
.	.	.	.

APPENDIX G

AMBEX FOCAL POINTS *(August 2011)*

	State/*Etat*/ Organisation	Name/*Nom et Prénom*	Address/*Adresse*	E-mail	Fax	Telephone
1	Cameroon	ABONDO Cyrille	Chef de Service de la Météorologie Aéronautique	abondocyrille@yahoo.com	+237 22 30 33 62	+ 237 22 30 30 90
2	Congo	**OLEMBE Alexis Laurence**	B.P. 218 Brazzaville Aéroport CONGO	aolembe@yahoo.fr	+242 282 00 51	+242 972 16 77 / +242 411 48 95
4	Ethiopia					
5	Kenya	Winstone Gicheru	Kenya Civil Aviation Authority, Box 30163 Nairobi	Wgicheru @kcaa.or.ke	+25420822300	+254 20 827470-5
6	France	Patrick SIMON	Météo-France, DSI/D/MSI, 42 avenue Coriolis, 31057 Toulouse cedex, FRANCE	Patrick.simon@meteo.fr	+261 202 258 115	+ 261 33 12 108 05 10 Morocco
7	Liberia					
8	Madagascar	RAKOTONDRIANA Jérôme **RABENASOLO Mamitiana Alain**	Direction Générale de la Météo, BP 1254 Antananarivo B.P. 46 Ivato Aéroport MADAGASCAR	madagascarmto@asecna.org; jerome@asecna.mg mamyalain6@yahoo.fr	+261 202 258 115 +261 20 22 581 15	+ 261 33 12 108 05 +261 3410 034 54
9	Niger	**YERIMA Ladan**	B.P. 1096 Niamey Aéroport NIGER	E-mail : yeriladan@yahoo.fr	+227 20 73 55 12	+227 94 85 22 27
10	Nigeria	IKEKHUA O. Felix Mrs. M. O. Iso	NIMET	felix_ikekhua@yahoo.com maryottuiso@yahoo.com	+234 9 4130710 +234 9 4130711	+234 1 477 16 62 +234 9 4130709

						+ 234 9 4130710
11	Senegal (Rapporteur)	DIEME Saïdou	ASECNA Sénégal B.P. 8132 Dakar Aéroport Yoff SENEGAL	saidoudieme@yahoo.fr saidoudieme@yahoo.fr	+221 33 820 06 00 +221 33 820 02 72/ +221 33 820 06 00	+221 33 869 22 03 : +221 77 652 53 87
12	South Africa	Albert Moloto	South African Weather Service	albert.moloto@weathersa.co.za		+27 11 390 9333
13	United Kingdom (RU)					
14	ASECNA	NGOUAKA Dieudonné	ASECNA DG BP 3144 Dakar, Sénégal	ngouakadie@asecna.org	+221 33 8234654	+221 33 8695714
15	IATA					
16	Dakar RODB	DI EME Saïdou	ASECNA Sénégal	saidoudieme@yahoo.fr	+221 33 820 06 00	+221 33 869 22 03
17	Pretoria RODB	Albert Moloto	South African Weather Service	albert.moloto@weathersa.co.za		+27 11 390 9333
17	WMO/OMM	Mr Scylla Siliayo,	WMO Scientific Officer, Aeronautical Meteorological Division Weather and Disaster Risk Reduction Services Department	ssillavo@wmo	+ 41.22.730.81.28	: + 41.22.730.84.08
18	EUR DMG	Patrick SIMON	Météo-France, DSI/D/MSI, 42 avenue Coriolis, 31057 Toulouse cedex, FRANCE	Patrick.simon@meteo.fr	+261 202 258 115	+ 261 33 12 108 05 10 Morocco
19	IROG Toulouse	Patrick SIMON	Météo-France, DSI/D/MSI, 42 avenue Coriolis, 31057 Toulouse cedex, FRANCE	Patrick.simon@meteo.fr	+261 202 258 115	+ 261 33 12 108 05 10 Morocco
20	ASIA/PAC/M TSF					

APPENDIX H:

INTERNATIONAL CIVIL AVIATION ORGANIZATION

ORGANISATION DE L'AVIATION CIVILE INTERNATIONALE

AFTN ROUTING DIRECTORY
AFRICA INDIAN OCEAN REGION

ANNUAIRE D'ACHEMINEMENT DU RSFTA
REGION AFRIQUE OCEAN INDIEN

FIFTEENTH/ QUINZIEME
EDITION

Prepared by the ICAO Western and Central African Office and published by authority of the Secretary General

Liste établie par le bureau de l'OACI pour l'Afrique Occidentale et Centrale et publiée sous l'autorité du Secrétaire général

DAKAR **Mai 2013**

May 2013

The designations employed and the presentation of the material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of ICAO concerning the legal status of any country or territory or of its authorities, or concerning the delimitation of its frontiers.

Les désignations employées et la présentation des éléments de ce document n'impliquent aucune expression d'opinion de la part du Secrétariat de l'OACI concernant le statut juridique d'un pays ou territoire quelconque ou de ses autorités, ou concernant la délimitation de ses frontières.

IE

1. INTRODUCTION

1.1 This Fourteenth Edition of the AFTN Routing Directory of the Africa-Indian Ocean Region is published by the ICAO Eastern and Southern African Office, Nairobi, in accordance with Recommendation 12/8 of the AFI/VI Regional Air Navigation meeting held in Arusha (Tanzania) from 20 November to 12 December 1979.

1.2 This Edition is the result of the Fourth Informal Meeting on the AFI AFTN Routing Directory held in Nairobi from 1 to 3 March 2004.The data for the different COM Centres have been compiled from information received from AFI States. Where no information has been received the data have been obtained by extrapolation of those provided for other centres.

IIE

Explanatory Notes

a) Column A contains destination AFTN routing indicators. These indicators employ the minimum number of characters to preclude ambiguity.

b) Columns 1, 2, 3,4 and 5 contain the location indicators of the originating AFTN centres in the heading and the AFTN routing indication in conjunction with the destination indicators.

c) The lefthand subdivision under each origin defines the AFTN centre which is the primary route for the relevant destination indicators. This is indicated in upper-case letters.

d) The righthand subdivision under each origin defines the AFTN centre, which is the diversion route for the relevant destination indicators. This is indicated in lower-case letters. More than one diversion route may be included if required.

e) National and/or non-AFTN routing is indicated by the letter N.

IF

1. INTRODUCTION

1.1 Cette Quatorzième Edition de l'Annuaire d'acheminement du RSFTA pour la Région Afrique - Océan Indien (AFI) est publiée par le Bureau Régional de l'OACI pour l'Afrique orientale et australe à Nairobi conformément à la Recommandation 12/8 de la Sixième Réunion Régionale de navigation aérienne AFI qui s'est tenue à Arusha en Tanzanie du 20 novembre au 12 décembre 1979.

1.2 Cette Edition est le résultat de la Quatrième Réunion Informelle sur l'Annuaire d'acheminement RSFTA de la Région AFI tenue à Nairobi du 1 au 3 mars 2004. Les données des différents centres de communication ont été établies sur la base des renseignements fournis par les Etats de la Région AFI. Les données pour les centres qui n'ont fourni aucun renseignement ont été obtenues par extrapolation des renseignements fournis pour les autres centres.

IIF

Note explicative du Tableau d'acheminement

a) La colonne A contient les indicatifs de destination RSFTA. Ces indicatifs utilisent le nombre minimum de caractères pour éviter les ambiguïtés.

b) Les colonnes 1, 2, 3, 4 et 5 contiennent les indicatifs d'emplacement des centres RSFTA de départ dans l'en-tête et l'indication d'acheminement RSFTA conjointement avec les indicatifs de destination.

c) Sous chaque origine on trouve, à gauche et en majuscules, le centre RSFTA qui constitue l'acheminement principal pour l'indicatif de destination pertinent.

d) Sous chaque origine on trouve, à droite et en miniscules, le centre RSFTA qui constitue l'acheminement de déroutement pour l'indicatif de destination pertinent. Plus d'un acheminement de déroutement peut être inséré si nécessaire.

e) Les acheminements nationaux et/ou non RSFTA sont indiqués par la lettre N.

III

INDEX TO NATIONALITY LETTERS FOR LOCATION INDICATORS
(DOC.7910/93)

AG - Solomon Islands
AN - Nauru
AY - Papua New Guinea

BG - Greenland (Denmark)
BI - Iceland

CU, CW, CY,
C - Canada

DA - Algérie
DB - Benin
DF - Burkina Faso
DG - Ghana
DI - Côte d'Ivoire
DN - Nigeria
DR - Niger
DT - Tunisie
DX - Togo

EB - Belgique
ED - Germany
EE - Estonia
EF - Finland
EG - United Kingdom
EH - Netherlands, Kingdom of
EI - Ireland
EK - Denmark
EL - Luxembourg
EN - Norway
EP - Pologne
ES - Sweden
ET - Germany
EU - Europe
EV - Latvia
EY - Lithuania

FA - South Africa
FB - Botswana
FC - Congo
FD - Swaziland
FE - Rép. Centrafricaine
FG - Guinea Ecuatorial
FH - Ascension Island (U.K.)
FI - Mauritius
FJ - British Indian Ocean Territory
FK - Cameroun
FL - Zambia
FM - Comores, Réunion (France), Madagascar
FN - Angola
FO - Gabon
FP - Sao Tome and Principe
FQ - Mozambique
FS - Seychelles
FT - Tchad
FV - Zimbabwe
FW - Malawi
FX - Lesotho
FY - Namibia
FZ - République Démocratique du Congo

GA - Mali
GB - Gambia
GC - Espana (Islas Canarias)
GE - Espana
GF - Sierra Leone
GG - Guinée-Bissau
GL - Libéria
GM - Maroc
GO - Sénégal
GQ - Mauritanie
GS - Sahara Occidental
GU - Rép. de Guinée
GV - Cap-Vert

HA - Ethiopia
HB - Burundi
HC - Somalia
HD - Djibouti
HE - Egypt
HH - Eritrea
HK - Kenya
HL - Libyan Arab Jamahiriya
HR - Rwanda

HS - Sudan
HS - Sudan
HT - United Rep. of Tanzania
HU - Uganda

KA, KB, KC, KD, KE, KF, KG, KH, KI, KJ, KL, KM, KN, KO, KP, KR, KS, KT, KU, KV, KW, KX, KY,
KZ - United States

LA - Albania
LB - Bulgaria
LC - Cyprus
LD - Croatia
LE - Espana
LF - France
LG - Greece
LH - Hungary
LI - Italy
LJ - Slovenia
LK - Czech Republic
LL - Israel
LM - Malta
LN - Monaco
LO - Austria
LP - Portugal (Madeira & Açores)
LQ - Bosnia and Herzegovina
LR - Roumanie
LS - Suisse/Switzerland
LT - Turkey
LU - Republic of Moldova
LV - Areas under the control of the Palestinian Authority
LW - The former Yougoslav Republic of Macedonia
LX - Gibraltar (U.K.)
LY - Federal Republic of Yougoslavia
LZ - Slovakia

MB - Turks and Caicos Islands (U.K.)
MD - Rep. Dominicana
MG - Guatemala
MH - Honduras
MK - Jamaica
MM - Mexico
MN - Nicaragua
MP - Panama
MR - Costa Rica
MS - El Salvador
MT - Haiti
MU - Cuba
MW - Cayman Is (U.K.)
MY - Bahamas
MZ - Belize

NC - Cook Islands
NF - Fiji
NF - Tonga
NG - Kiribati
NG - Tuvalu
NI - Niue Island (New Zealand)
NL - Iles Wallis et Futuna (France)
NS - American Samoa
NS - Samoa
NT - Polynésie française
NV - Vanuatu
NW - Nouvelle Calédonie (France)
NZ - New Zealand

OA - Afghanistan
OB - Bahrain
OE - Saudi Arabia
OI - Iran, Islamic Rep. of
OJ - Jordan
OK - Kuwait
OL - Liban
OM - United Arab Emirates
OO - Oman
OP - Pakistan
OR - Iraq
OS - Syrian Arab Republic
OT - Qatar
OY - Yemen

PA, PF, PO
PP - Alaska (U.S.)
PG - Mariana Is. (U.S.), Guam (U.S)
PH - Hawai (U.S.)
PJ - Johnston I. (U.S.)
PK - Marchall Is. (U.S.)
PL - Line Is. (U.S.)
PL - Kiribati
PM - Midway Is. (U.S.)
PT - Micronesia, Federated States of
PT - Palau
PW - Wake I. (U.S.)

RC - China
RJ - Japan

RK - Republic of Korea
RO - Japan
RP - Philippines
SA - Argentina
SB - Brazil
SC - Chile
SE - Ecuador
SF - Falklands Is. (U.K.)
SG - Paraguay
SH - Chile
SK - Colombia
SL - Bolivia
SM - Suriname
SO - Guyane Française
SP - Peru
SU - Uruguay
SV - Venezuela
SY - Guyana

TA - Antigua and Barbuda
TB - Barbados
TD - Dominica
TF - Antilles Françaises
TG - Grenada
TI - Virgin Islands (U.S.)
TJ - Puerto Rico (U.S.)
TK - St. Kitts and Nevis
TL - St. Lucia
TN - Netherlands Antilles
TN - Aruba (Netherlands, Kingdom of the)
TQ - Anguilla I. (U.K.)
TR - Montserrat I. (U.K.)
TT - Trinidad and Tobago
TU - Virgin Islands (U.K.)
TV - St. Vincent and the Grenadines
TX - Bermuda (U.K.)

UA - Kazakhstan
UA - Kyrgyzstan
UB - Azerbaijan
UE - Russian Federation
UG - Armenia
UG - Georgia
UH - Russian Federation
UI - Russian Federation
UK - Ukraine
UL - Russian Federation
UM - Belarus
UM - Russian Federation
UN,UO,UR,
US - Russian Federation
UT - Tadjikistan
UT - Turkmenistan
UT - Uzbekistan
UU, UW - Russian Federation

VA, VE, VI,
VO - India
VC - Sri Lanka
VD - Cambodia
VG - Bangladesh
VH - Hong Kong (China)
VL - Lao People's Democratic Rep.
VM - Macau (Portugal)
VN - Nepal
VQ - Bhutan
VR - Maldives
VT - Thailand
VV - Viet Nam
VY - Myanmar

WA, WI
WR - Indonesia
WB - Brunei Darussalam
WB - Malaysia
WM - Malasia (Peninsular)
WP - East Timor
WS - Singapore

YA, YB,YC,YD, YE, YF, YG,YH,YI, YJ, YK, YL, YM, YN, YO, YP,YQ, YR, YS,YT, YU, YV, YW,
YY - Australia

ZB, ZG, ZH, ZJ, ZL,ZP, ZS, ZU, ZW
ZY - China
ZK - Dem. People's Rep. of Korea
ZM - Mongolia

A	1		2		3		4		5	
ORIGIN(E) / DESTINATION	DAAA Alger		DBBB Cotonou		DFFF Ouagadougou		DGAA Accra		DIII Abidjan	
A	DT	lf	DR	dx	DR	ga	DR	dnk	DR	go
B	LF	dt	DR	dx	DR	ga	DR	dnk	DR	go
C	LF	dt	DR	dx	DR	ga	DR	dnk	GO	dr
DA	-	-	DR	dx	DR	ga	DR	dnk	DR	go
DB	DR	gm	-	-	DR	ga	DB	dr	DR	go
DF	DR	gm	DR	dx	-	-	DF	dr	DR	go
DG	DR	gm	DG	dr	DG	dr	-	-	DG	dr
DI	DR	gm	DR	dx	DR	ga	DI	dr	-	-
DN			DN	dr					DR	go
DNK	DR	gm	DN	dr	DR	ga	DNK	dr	DR	go
DNL	DR	gm	DN	dr	DR	ga	DNL	dnk	DR	ga
DR	DR	gm	DR	dx	DR	ga	DR	dnk	DR	go
DT	DT	lf	DR	dx	DR	ga	DR	dnk	DR	go
DX	DR	gm	DX	dr	DR	ga	DX	db	DX	dr
E	LF	dt	DR	dx	DR	ga	DR	dnk	DR	go
F(Except. FH, FJ,FO FT)	DR	gm	DR	dx	DR	ga	DR	dnk	GO	dr
FC							FC	dr		
FH	LF	dt	DR	dx	DR	ga	DR	dnk	DR	go
FJ	LF	dt	DR	dx	DR	ga	DR	dnk	DR	go
FO	DR	gm	DR	dx	DR	ga	FO	dr	GO	dr
FT	DR	gm	DR	dx	DR	ga	DR	dnk	DR	go
GA	GM	dr	DR	dx	GA	dr	DR	dnk	GA	go
GB	GM	dr	DR	dx	DR	ga	DR	dnk	GO	Dr
GC	GM	lf	DR	dx	DR	ga	DR	dnk	GO	Dr
GE	LF	gm	DR	dx	DR	ga	DR	dnk	GO	Dr
GF	GM	dr	DR	dx	DR	ga	DR	dnk	GO	dr
GG	GM	dr	DR	dx	DR	ga	DR	dnk	GG	go

A	1		2		3		4		5	
ORIGIN(E) / **DESTINATION**	DAAA Alger		DBBB Cotonou		DFFF Ouagadougou		DGAA Accra		DIII Abidjan	
GL	GM	dr	DR	dx	DR	ga	DR	dnk	GO	dr
GM	GM	lf	DR	dx	DR	ga	DR	dnk	GO	dr
GO	GM	dr	DR	dx	DR	ga	DR	dnk	GO	dr
GQ	GQ	dr	DR	dx	DR	ga	DR	dnk	GQ	go
GS	GM	lf	DR	dx	DR	ga	DR	dnk	GO	dr
GU	GM	dr	DR	dx	DR	ga	DR	dnk	GO	dr
GV	GM	dr	DR	dx	DR	ga	DR	dnk	GO	dr
H	DT	lf	DR	dx	DR	ga	DR	dnk	DR	go
K	LF	dt	DR	dx	DR	ga	DR	dnk	DR	go
L	LF	dt	DR	dx	DR	ga	DR	dnk	DR	go
M	LF	dt	DR	dx	DR	ga	DR	dnk	DR	go
N	DT	lf	DR	dx	DR	ga	DR	dnk	DR	go
O	DT	dr	DR	dx	DR	ga	DR	dnk	DR	go
P	DT	lf	DR	dx	DR	ga	DR	dnk	DR	go
R	DT	lf	DR	dx	DR	ga	DR	dnk	DR	go
S	GM	lf	DR	dx	DR	ga	DR	dnk	GO	dr
T	LF	dt	DR	dx	DR	ga	DR	dnk	DR	go
U	LF	dt	DR	dx	DR	ga	DR	dnk	DR	go
V	DT	lf	DR	dx	DR	ga	DR	dnk	DR	go
W	DT	lf	DR	dx	DR	ga	DR	dnk	DR	go
Y	DT	lf	DR	dx	DR	ga	DR	dnk	DR	go
Z	DT	lf	DR	dx	DR	ga	DR	dnk	DR	go

A	1		2		3		4		5	
ORIGIN(E) DESTINATION	**DNKK Kano**		**DNLL Lagos**		**DRRR Niamey**		**DTTC Tunis**		**DXXX Lome**	
A	DR	dg	DNK	dg	GO	fc	HE	li	DR	di
B	DR	dg	DNK	dg	DA	go	LI	da	DR	di
C	DR	dg	DNK	dg	DA	go	LI	da	DR	di
DA	DR	dg	DNK	dr	DA	go	DA	li	DR	di
DB	DG	dr	DB	dnk	DB	dx	DA	li	DB	dr
DF	DR	dg	DNK	dg	DF	go	DA	li	DR	di
DG	DG	dr	DG	dnk	DG	dx	DA	li	DG	dr
DI	DR	dg	DG	dnk	DI	go	DA	li	DI	dr
DN					DNK	db			DR	di
DNK	-	-	DNK	dg	DNK	dg	DA	li	DR	di
DNL	DNL	dg	-	-	DNM	db	DA	li	DR	dg
DNM					DNM	db				
DR	DR	dg	DR	dg	-	-	DA	li	DR	di
DT	DR	dg	DNK	dg	DA	go	-	-	DR	di
DX	DG	dr	DG	dnk	DX	db	DA	li	-	-
E	DR	dg	DNK	dg	DA	go	LI	da	DR	di
F(Except.FC, FE, FG, FH, FJ, FK, FO, FP, FT)	DR	dg	DNK	dg	FC	go	DA	li	DR	di
FC	FC	dr	DNK	dg	FC	go	DA	li	DR	di
FE	DR	dg	DNK	dg	FC	ft	DA	li	DR	di
FG	DR	dg	DNK	dg	FC	go	DA	li	DR	di
FH	DR	dg	DNK	dg	DA	go	LI	da	DR	di
FJ	DR	dg	DNK	dg	DA	go	LI	da	DR	di
FK	FK	fc	FK	dnk	FC	go	DA	li	DR	di
FO	FO	fc	FO	dnk	FC	go	DA	li	DR	di
FP	DR	dg	DNK	dg	FC	go	DA	li	DR	di
FT	FT	dr	DNK	dg	FT	fc	DA	li	DR	di
G (except for	DR	dg	DNK	dg	GO	fc	DA	li	DR	di

A	1		2		3		4		5	
ORIGIN(E) DESTINATION	**DNKK Kano**		**DNLL Lagos**		**DRRR Niamey**		**DTTC Tunis**		**DXXX Lome**	
GA, GC, GG, GM, GO, GS)										
GA					GO	di			DR	di
GC					GO	da			DR	di
GG					GO	di			DR	di
GM					GO	da			DR	di
GQ					GQ	go			DR	di
GS					GO	da			DR	di
H(Except. HE, HL HS)	DR	dg	DNK	dg	HA	da	HE	li	DR	di
HE	DR	dg	DNK	dg	DA	ha	HE	li	DR	di
HL	DR	dg	DNK	dg	HL	da	HL	li	DR	di
HS					HA	ft			DR	di
K	DR	dg	DNK	dg	DA	go	LI	da	DR	di
L	DR	dg	DNK	dg	DA	go	LI	da	DR	di
M	DR	dg	DNK	dg	DA	go	LI	da	DR	di
N	DR	dg	DNK	dg	GO	fc	HE	li	DR	di
O	DR	dg	DNK	dg	HA	da	HE	li	DR	di
P	DR	dg	DNK	dg	HA	go	HE	li	DR	di
R	DR	dg	DNK	dg	HA	go	HE	li	DR	di
S	DR	dg	DNK	dg	GO	fc	DA	li	DR	di
T	DR	dg	DNK	dg	DA	go	LI	da	DR	di
U	DR	dg	DNK	dg	DA	go	LI	da	DR	di
V	DR	dg	DNK	dg	HA	da	HE	li	DR	di
W	DR	dg	DNK	dg	HA	go	HE	li	DR	di
Y	DR	dg	DNK	dg	GO	fc	HE	li	DR	di
Z	DR	dg	DNK	dg	GO	fc	HE	li	DR	di

A	1		2		3		4		5	
ORIGIN(E) DESTINATION	**FAOR Johannesburg**		**FYWH Windhoek**		**FBSK Gaborone**		**FCBB Brazzaville**		**FDMS Manzini**	
A	YS	le	FAO	-	FAO	fv	FA	go	FAO	-
B	GO	le	FAO	-	FAO	fv	DR	go	FAO	-
C	YS	le	FAO	-	FAO	fv	FA	go	FAO	-
D (Except DG, DNK and DNL)	FC	go	FAO	-	FAO	fv	DR	go	FAO	-
DG	FC	go	FAO	-	FAO	fv	DG	dr	FAO	-
DNK	FC	go	FAO	-	FAO	fv	DNK	dr	FAO	-
DNL	FC	go	FAO	-	FAO	fv	DNK	dr	FAO	-
E	LE	go	FAO	-	FAO	fv	DR	go	FAO	-
FA	-	-	FAO	-	FAO	fv	FA	go	FAO	-
FB	FB	fv	FAO	-	-		FA	go	FAO	-
FC	FC	go	FAO	-	FAO	fv	-	-	FAO	-
FD	FD	-	FAO	-	FAO	fv	FA	go	-	-
FE	FC	go	FAO	-	FAO	fv	FE	ft	FAO	-
FG	FC	go	FAO	-	FAO	fv	FG	fk	FAO	-
FH	GO	fc	FAO	-	FAO	fv	DR	go	FAO	-
FI	FI	fm	FAO	-	FAO	fv	FA	fm	FAO	-
FJ	LE	go	FAO	-	FAO	fv	DR	go	FAO	-
FK	FC	go	FAO	-	FAO	fv	FK	fo	FAO	-
FL	FL	fv	FAO	-	FAO	fv	FA	go	FAO	-

A	1		2		3		4		5	
ORIGIN(E) DESTINATION	**FAOR Johannesburg**		**FYWH Windhoek**		**FBSK Gaborone**		**FCBB Brazzaville**		**FDMS Manzini**	
FM	FM	fi	FAO	-	FAO	fv	FM	fa	FAO	-
FMC	FM	fi	FAO	-	FAO	fv	FM	fa	FAO	-
FME	FM	fi	FAO	-	FAO	fv	FM	fa	FAO	-
FN	FN	fqm	FAO	-	FAO	fv	FN	fa	FAO	-
FO	FC	go	FAO	-	FAO	fv	FO	fk	FAO	-
FP	FC	go	FAO	-	FAO	fv	FP	fo	FAO	-
FQB	FQB	fqm	FAO	-	FAO	fv	FA	go	FAO	-
FQM	FQM	fqb	FAO	-	FAO	fv	FA	go	FAO	-
FS	FS	hk	FAO	-	FAO	fv	FA	go	FAO	-
FT	FC	go	FAO	-	FAO	fv	FT	dr	FAO	-
FV	FV	fb	FAO	-	FAO	fv	FA	go	FAO	
FW	FW	-	FAO	-	FAO	fv	FA	go	FAO	
FX	FX	-	FAO	-	FAO	fv	FA	go	FAO	
FY	FY	-	-	-	FAO	fv	FA	go	FAO	
FZ	FZ	fc	FAO	-	FAO	fv	FZ	fa	FAO	
G	GO	fc	FAO	-	FAO	fv	GO	dr	FAO	
HA	HK	fi	FAO	-	FAO	fv	DR	fa	FAO	
			FAO							

A	1		2		3		4		5	
ORIGIN(E) DESTINATION	**FAOR Johannesburg**		**FYWH Windhoek**		**FBSK Gaborone**		**FCBB Brazzaville**		**FDMS Manzini**	
HB	HB	hr		-	FAO	fv	FA	go	FAO	
HC	HK	fi	FAO	-	FAO	fv	DR	fa	FAO	
HD	HK	fi	FAO	-	FAO	fv	DR	fa	FAO	
HE	HK	fi	FAO	-	FAO	fv	DR	go	FAO	
HH	HK	fi	FAO	-	FAO	fv	DR	go	FAO	
HK	HK	fi	FAO	-	FAO	fv	HK	fa	FAO	
HL	HK	fi	FAO	-	FAO	fv	DR	go	FAO	
HR	HR	hb	FAO	-	FAO	fv	FA	go	FAO	
HS	HK	fi	FAO	-	FAO	fv	DR	go	FAO	
HT	HT	hk	FAO	-	FAO	fv	FA	go	FAO	
HU	HK	hu	FAO	-	FAO	fv	FA	go	FAO	
K	YS	le	FAO	-	FAO	fv	FA	go	FAO	
L	GO	le	FAO	-	FAO	fv	DR	go	FAO	
M	YS	le	FAO	-	FAO	fv	FA	go	FAO	
N	YS	hk	FAO	-	FAO	fv	FA	go	FAO	
O	HK	fi	FAO	-	FAO	fv	DR	go	FAO	
P	YS	hk	FAO	-	FAO	fv	FA	go	FAO	
R	YS	hk	FAO	-	FAO	fv	FA	go	FAO	

A	1		2		3		4		5	
ORIGIN(E) DESTINATION	**FAOR Johannesburg**		**FYWH Windhoek**		**FBSK Gaborone**		**FCBB Brazzaville**		**FDMS Manzini**	
S	SA	go	FAO	-	FAO	fv	GO	dr	FAO	
T	GO	fc	FAO	-	FAO	fv	GO	dr	FAO	
U	YB	hk	FAO	-	FAO	fv	FA	go	FAO	
V (except VA, VE, VI, VN, VO and VQ)	YB	hk	FAO	-	FAO	fv	FA	go	FAO	
VA	HK	fi	FAO	-	FAO	fv	FA	go	FAO	
VE	HK	fi	FAO	-	FAO	fv	FA	go	FAO	
VI	HK	fi	FAO	-	FAO	fv	FA	go	FAO	
VN	HK	fi	FAO	-	FAO	fv	FA	go	FAO	
VO	HK	fi	FAO	-	FAO	fv	FA	go	FAO	
VQ	HK	fi	FAO	-	FAO	fv	FA	go	FAO FAO	
W	YS	hk	FAO	-	FAO	fv	FA	go	FAO	
Y	YS	hk	FAO	-	FAO	fv	FA	go	FAO	
Z	YS	hk	FAO	-	FAO	fv	FA	go	FAO	

A	1		2		3		4		5	
ORIGIN(E) DESTINATION	**FEFF Bangui**		**FGBT Bata**		**FGSL Malabo**		**FHAW ASCENSION Is. U.K.**		**FIMP Mauritius/Plaisance**	
A	FC	ft	FGS	-	FC	fk	EG	-	FA	fm
B	FC	ft	FGS	-	FC	fk	EG	-	FM	fa
C	FC	ft	FGS	-	FC	fk	EG	-	FA	fm
D	FC	ft	FGS	-	FC	fk	EG	-	FM	fa
E	FC	ft	FGS	-	FC	fk	EG	-	HK	fa
FA	FC	ft	FGS	-	FC	fk	EG	-	FA	fm
FB	FC	ft	FGS	-	FC	fk	EG	-	FA	fm
FC	FC	ft	FGS	-	FC	fk	EG	-	FM	fa
FD	FC	ft	FGS	-	FC	fk	EG	-	FA	fm
FE	-	ft	FGS	-	FC	fk	EG	-	FM	fa
FG	FC	ft	FGS*	-	-	fk	EG	-	FM	fa
FH	FC	ft	FGS	-	FC	fk	-	-	HK	fa
FI	FC	ft	FGS	-	FC	fk	EG	-	-	
FJ	FC	ft	FGS	-	FC	fk	EG	-	FA	fm
FK	FC	ft	FGS	-	FK	fc	EG	-	FM	fa
FL	FC	ft	FGS	-	FC	fk	EG	-	FA	fm
FM	FC	ft	FGS	-	FC	fk	EG	-	FM	fme
FMC	FC	ft	FGS	-	FC	fk	EG	-	FM	fme
FME	FC	ft	FGS	-	FC	fk	EG	-	FME	fm
FN	FC	ft	FGS	-	FC	fk	EG	-	FA	fm
FO	FC	ft	FGS	-	FC	fk	EG	-	FM	fa
FP	FC	ft	FGS	-	FC	fk	EG	-	FM	fa
FQ	FC	ft	FGS	-	FC	fk	EG	-	FA	fm
FS	FC	ft	FGS	-	FC	fk	EG	-	HK	fa
FT	FT	fc	FGS	-	FC	fk	EG	-	FM	fa
FV	FC	ft	FGS	-	FC	fk	EG	-	FA	fm

A	1		2		3		4		5	
ORIGIN(E) DESTINATION	**FEFF Bangui**		**FGBT Bata**		**FGSL Malabo**		**FHAW ASCENSION Is. U.K.**		**FIMP Mauritius/Plaisance**	
FW	FC	ft	FGS	-	FC	fk	EG	-	FA	fm
FX	FC	ft	FGS	-	FC	fk	EG	-	FA	fm
FY	FC	ft	FGS	-	FC	fk	EG	-	FA	fm
FZ	FC	ft	FGS	-	FC	fk	EG	-	FA	fm
G	FC	ft	FGS	-	FC	fk	EG	-	FM	fa
H (Except HB, HR)	FC	ft	FGS	-	FC	fk	EG	-	HK	fa
HB	FC	ft	FGS	-	FC	fk	EG	-	FA	fm
HR	FC	ft	FGS	-	FC	fk	EG	-	FA	fm
K	FC	ft	FGS	-	FC	fk	EG	-	FA	fm
L	FC	ft	FGS	-	FC	fk	EG	-	HK	fm
M	FC	ft	FGS	-	FC	fk	EG	-	FA	fm
N	FC	ft	FGS	-	FC	fk	EG	-	FA	fm
O	FC	ft	FGS	-	FC	fk	EG	-	HK	fa
P	FC	ft	FGS	-	FC	fk	EG	-	FA	fm
R	FC	ft	FGS	-	FC	fk	EG	-	FA	fm
S	FC	ft	FGS	-	FC	fk	EG	-	FM	fa
T	FC	ft	FGS	-	FC	fk	EG	-	FM	fa
U	FC	ft	FGS	-	FC	fk	EG	-	FA	fm
V	FC	ft	FGS	-	FC	fk	EG	-	FA	fm
W	FC	ft	FGS	-	FC	fk	EG	-	FA	fm
Y	FC	ft	FGS	-	FC	fk	EG	-	FA	fm
Z	FC	ft	FGS	-	FC	fk	EG	-	FA	fm

* except FGS

A	1		2		3		4		5	
ORIGIN(E) DESTINATION	**FJDG Diego Garcia U.K.**		**FKKK Douala**		**FLKK Lusaka**		**FMMM Antananarivo**		**FMCH Moroni**	
A	EG	kj	FC	fo	FAO	fv	FA	fi	FMM	-
B	EG	kj	FC	fo	FAO	fv	GO	fc	FMM	-
C	EG	kj	FC	fo	FAO	fv	FA	fi	FMM	-
D (except DNK, DNL)	EG	kj	FC	fo	FAO	fv	GO	fc	FMM	-
DNK	EG	kj	DNK	fc	FAO	fv	FC	go	FMM	-
DNL	EG	kj	DNL	fc	FAO	fv	FC	go	FMM	-
E	EG	kj	FC	fo	FAO	fv	GO	fc	FMM	-
FA	EG	kj	FC	fo	FAO	fv	FA	fi	FMM	-
FB	EG	kj	FC	fo	FAO	fv	FA	fi	FMM	-
FC	EG	kj	FC	fo	FAO	fv	FC	fa	FMM	-
FD	EG	kj	FC	fo	FAO	fv	FA	fi	FMM	-
FE	EG	kj	FC	fo	FAO	fv	FC	fa	FMM	-
FG	EG	kj	FG	fc	FAO	fv	FC	fa	FMM	-
FH	EG	kj	FC	fo	FAO	fv	GO	fc	FMM	-
FI	EG	kj	FC	fo	FAO	fv	FI	fme	FMM	-
FJ	-	-	FC	fo	FAO	fv	GO	fc	FMM	-
FK	EG	kj	-	-	FAO	fv	FC	fa	FMM	-
FL	EG	kj	FC	fo	-	-	FA	fi	FMM	-
FM	EG	kj	FC	fo	FAO	fv	-	-	FMM	-
FMC (except FMCZ)	EG	kj	FC	fo	FAO	fv	FMCH	-	-	-
FMCZ			FC	fo			FMCZ	fme		
FME	EG	kj	FC	fo	FAO	fv	FME	fi	FMM	-
FN	EG	kj	FC	fo	FAO	fv	FA	fc	FMM	-
FO	EG	kj	FO	fc	FAO	fv	FC	fa	FMM	-
FP	EG	kj	FC	fo	FAO	fv	FC	fa	FMM	-
FQ	EG	kj	FC	fo	FAO	fv	FA	fi	FMM	-

A	1		2		3		4		5	
ORIGIN(E) DESTINATION	**FJDG Diego Garcia U.K.**		**FKKK Douala**		**FLKK Lusaka**		**FMMM Antananarivo**		**FMCH Moroni**	
FS	EG	kj	FC	fo	FAO	fv	FA	fi	FMM	-
FT	EG	kj	FT	fc	FAO	fv	FC	fa	FMM	
FV	EG	kj	FC	fo	FAO	fv	FA	fi	FMM	
FW	EG	kj	FC	fo	FAO	fv	FA	fi	FMM	
FX	EG	kj	FC	fo	FAO	fv	FA	fi	FMM	
FY	EG	kj	FC	fo	FAO	fv	FA	fi	FMM	
FZ	EG	kj	FC	fo	FAO	fv	FC	fa	FMM	
G	EG	kj	FC	fo	FAO	fv	GO	fc	FMM	
H	EG	kj	FC	fo	FAO	fv	FA	fi	FMM	
K	EG	kj	FC	fo	FAJ	fv	FA	fi	FMM	
L	EG	kj	FC	fo	FAO	fv	GO	fa	FMM	
M	EG	kj	FC	fo	FAO	fv	FA	fi	FMM	
N	EG	kj	FC	fo	FAO	fv	FA	fi	FMM	
O	EG	kj	FC	fo	FAO	fv	FI	fa	FMM	
P	EG	kj	FC	fo	FAO	fv	FA	fi	FMM	
R	EG	kj	FC	fo	FAO	fv	FA	fi	FMM	
S	EG	kj	FC	fc	FAO	fv	GO	fc	FMM	
T	EG	kj	FC	fo	FAO	fv	GO	fc	FMM	
U	EG	kj	FC	fo	FAO	fv	FA	fi	FMM	
V	EG	kj	FC	fo	FAO	fv	FA	fi	FMM	
W	EG	kj	FC	fo	FAO	fv	FA	fi	FMM	
Y	EG	kj	FC	fo	FAO	fv	FA	fi	FMM	
Z	EG	kj	FC	fo	FAO	fv	FA	fi	FMM	

A	1		2		3		4		5	
ORIGIN(E) DESTINATION	**FMEE Saint Denis**		**FNLU Luanda**		**FOOO Libreville**		**FPST Sao Tome**		**FQBR* Beira**	
A	FI	fm	FA	fq	FC	fk	FC	-	FA	fqm
B	FMM	fi	LP	fa	FC	fk	FC	-	FA	fqm
C	FMM	fi	LP	fa	FC	fk	FC	-	FA	fqm
D(except DA, DG, DNK, DNL, DT)	FMM	fi	FA	fq	FC	fk	FC	-	FA	fqm
DA	FMM	fi	LP	fa	FC	fk	FC	-	FA	fqm
DG	FMM	fi	FA	fq	DG	fc	FC	_	FA	fqm
DNK	FMM	fi	FA	fq	DNK	fc	FC	_	FA	fqm
DNL	FMM	fi	FA	fq	DNL	fc	FC	_	FA	fqm
DT	FMM	fi	LP	fa	FC	fk	FC	-	FA	fqm
E	FMM	fi	LP	fa	FC	fk	FC	-	FA	fqm
FA	FI	fm	FA	fq	FC	fk	FC	-	FA	fqm
FB	FI	fm	FA	fq	FC	fk	FC	-	FA	fqm
FC	FMM	fi	FC	fq	FC	fk	FC	-	FA	fqm
FD	FI	fm	FA	fq	FC	fk	FC	-	FA	fqm
FE	FMM	fi	FA	fq	FC	fk	FC	-	FA	fqm
FG	FMM	fi	FA	fq	FC	fk	FC	-	FA	fqm
FH	FI	fm	FA	fq	FC	fk	FC	-	FA	fqm
FI	FI	fm	FA	fq	FC	fk	FC	-	FA	fqm
FJ	FI	fm	FA	fq	FC	fk	FC	-	FA	fqm
FK	FMM	fi	FA	fq	FK	fc	FC	-	FA	fqm
FL	FI	fm	FA	fq	FC	fk	FC	-	FA	fqm
FMM	FMM	fi	FA	fq	FC	fk	FC	-	FA	fqm
FMC	FMM	fi	FA	fq	FC	fk	FC	-	FA	fqm
FME	-	-	FA	fq	FC	fk	FC	-	FA	fqm
FN	FI	fm	-	-	FC	fk	FC	-	FA	fqm
FO	FMM	fi	FA	fq	-	-	FC	-	FA	fqm

A	1		2		3		4		5	
ORIGIN(E) DESTINATION	**FMEE Saint Denis**		**FNLU Luanda**		**FOOO Libreville**		**FPST Sao Tome**		**FQBR* Beira**	
FP	FMM	fi	FA	fq	FC	fk	FC	-	FA	fqm
FQ	FI	fm	FQ	fa	FC	fk	FC	-	-	-
FS	FI	fm	FA	fq	FC	fk	FC	-	FA	fqm
FT	FMM	fi	FA	fq	FC	fk	FC	-	FA	fqm
FV	FI	fm	FA	fq	FC	fk	FC	-	FA	fqm
FW	FI	fm	FA	fq	FC	fk	FC	-	FA	fqm
FX	FI	fm	FA	fq	FC	fk	FC	-	FA	fqm
FY	FI	fm	FA	fq	FC	fk	FC	-	FA	fqm
FZ	FI	fm	FA	fq	FC	fk	FC	-	FA	fqm
G(Excpt. GV)	FMM	fi	FA	fq	GO	fc	FC	-	FA	fqm
GO	-	-	-	-	GO	fc	-	-	-	-
GV	FMM	fi	LP	fa	GO	fc	FC	-	FA	fqm
H	FI	fm	FA	fq	FC	fk	FC	-	FA	fqm
K	FMM	fi	LP	fa	FC	fk	FC	-	FA	fqm
L	FMM	fi	LP	fa	FC	fk	FC	-	FA	fqm
M	FMM	fi	LP	fa	FC	fk	FC	-	FA	fqm
N	FI	fm	FA	fq	FC	fk	FC	-	FA	fqm
O	FI	fm	FA	fq	FC	fk	FC	-	FA	fqm
P	FI	fm	FA	fq	FC	fk	FC	-	FA	fqm
R	FI	fm	FA	fq	FC	fk	FC	-	FA	fqm
S	FMM	fi	LP	fa	FC	fk	FC	-	FA	fqm
T	FMM	fi	LP	fa	FC	fk	FC	-	FA	fqm
U	FI	fm	LP	fa	FC	fk	FC	-	FA	fqm
V	FI	fm	FA	fq	FC	fk	FC	-	FA	fqm
W	FI	fm	FA	fq	FC	fk	FC	-	FA	fqm
Y	FI	fm	FA	fq	FC	fk	FC	-	FA	fqm
Z	FI	fm	FA	fq	FC	fk	FC	-	FA	fqm

A	1		2		3		4		5	
ORIGIN(E) DESTINATION	**FSSS Seychelles**		**FTTT NDjamena**		**FVHA Harare**		**FWLL Lilongwe**		**FXMM Maseru**	
A	HK	va	DR	fc	FA	fa	FA	-	FA	
B	HK	va	DR	fc	FA	fa	FA	-	FA	
C	HK	va	DR	fc	FA	fa	FA	-	FA	
D(except DN)	HK	va	DR	fc	FA	fa	FA	-	FA	
DN (except DNMA)	HK	va	DNK	dr	FA	fa	FA	-	FA	
DNMA	-	-	DNMA	dnk	-	-	-	-	-	
E	HK	va	DR	fc	FA	fa	FA	-	FA	
FA	HK	va	FC	dr	FA	fa	FA	-	FA	
FB	HK	va	FC	dr	FA	fa	FA	-	FA	
FC	HK	va	FC	dr	FA	fa	FA	-	FA	
FD	HK	va	FC	dr	FA	fa	FA	-	FA	
FE	HK	va	FE	fc	FA	fa	FA	-	FA	
FG	HK	va	FC	dr	FA	fa	FA	-	FA	
FH	HK	va	DR	fc	FA	fa	FA	-	FA	
FI	HK	va	FC	dr	FA	fa	FA	-	FA	
FJ	HK	va	DR	fc	FA	fa	FA	-	FA	
FK (except FKKR)	HK	va	FK	fc	FA	fa	FA	-	FA	
FKKR			FKKR	fc						
FL	HK	va	FC	dr	FA	fa	FA	-	FA	
FM	HK	va	FC	dr	FA	fa	FA	-	FA	
FN	HK	va	FC	dr	FA	fa	FA	-	FA	
FO	HK	va	FC	dr	FA	fa	FA	-	FA	
FP	HK	va	FC	dr	FA	fa	FA	-	FA	
FQ	HK	va	FC	dr	FA	fa	FA	-	FA	
FS	-	-	FC	dr	FA	fa	FA	-	FA	
FT	HK	va	-	-	FA	fa	FA	-	FA	
FV	HK	va	FC	dr	-	fa	FA	-	FA	
FW	HK	va	FC	dr	FA	fa	-	-	FA	

A	1		2		3		4		5	
ORIGIN(E) DESTINATION	**FSSS Seychelles**		**FTTT NDjamena**		**FVHA Harare**		**FWLL Lilongwe**		**FXMM Maseru**	
FX	HK	va	FC	dr	FA	fa	FA	-	-	
FY	HK	va	FC	dr	FA	fa	FA	-	FA	
FZ	HK	va	FC	dr	FA	fa	FA	-	FA	
G	HK	va	DR	fc	FA	fa	FA	-	FA	
H (except HL, HS)	HK	va	DR	fc	FA	fa	FA	-	FA	
HL			HL	dr						
HS			HS	dr						
K	HK	va	DR	fc	FA	fa	FA	-	FA	
L	HK	va	DR	fc	FA	fa	FA	-	FA	
M	HK	va	DR	fc	FA	fa	FA	-	FA	
N	HK	va	FC	dr	FA	fa	FA	-	FA	
O	HK	va	DR	fc	FA	fa	FA	-	FA	
P	HK	va	FC	dr	FA	fa	FA	-	FA	
R	HK	va	FC	dr	FA	fa	FA	-	FA	
S	HK	va	DR	fc	FA	fa	FA	-	FA	
T	HK	va	DR	fc	FA	fa	FA	-	FA	
U	HK	va	FC	dr	FA	fa	FA	-	FA	
V	HK	va	FC	dr	FA	fa	FA	-	FA	
W	HK	va	FC	dr	FA	fa	FA	-	FA	
Y	HK	va	FC	dr	FA	fa	FA	-	FA	
Z	HK	va	FC	dr	FA	fa	FA	-	FA	

A	1		2		3		4		5	
ORIGIN(E) DESTINATION	**FZAA Kinshasa N'Djili**		**GABS Bamako Senou**		**GBYD Banjul**		**GCCC Las Palmas**		**GEML Melila**	
A	FA	fc	GO	df	GO	-	LE	gm	LE	-
B	FC	fa	GO	df	GO	-	LE	gm	LE	-
C	FA	fc	GO	df	GO	-	LE	gm	LE	-
DA	FC	fa	GO	df	GO	-	GM	le	LE	-
DB	FC	fa	GO	df	GO	-	LE	gm	LE	-
DG	FC	fa	GO	df	GO	-	LE	gm	LE	-
DF	FC	fa	DF	go	GO	-	LE	gm	LE	-
DI	FC	fa	DI	go	GO	-	LE	gm	LE	-
DNK	FC	fa	GO	df	GO	-	LE	gm	LE	-
DNL	FC	fa	GO	df	GO	-	LE	gm	LE	-
DR	FC	fa	GO	df	GO	-	LE	gm	LE	-
DT	FC	fa	GO	df	GO	-	GM	le	LE	-
DX	FC	fa	GO	df	GO	-	LE	gm	LE	-
E	FC	fa	GO	df	GO	-	LE	gm	LE	-
F(Except.FC, FE, FK,FG,FH,FJ, FO, FP, FT, FZ)	FA	fc	GO	df	GO	-	LE	fa	LE	-
FC	FC	fa	GO	df	GO	-	LE	gm	LE	-
FE	FC	fa	GO	df	GO	-	LE	gm	LE	-
FK	FC	fa	GO	df	GO	-	LE	gm	LE	-
FG	FC	fa	GO	df	GO	-	LE	gm	LE	-
FH	FC	fa	GO	df	GO	-	LE	gm	LE	-
FJ	FC	fa	GO	df	GO	-	LE	gm	LE	-
FO	FC	fa	GO	df	GO	-	LE	gm	LE	
FP	FC	fa	GO	df	GO	-	LE	gm	LE	-
FT	FC	fa	GO	df	GO	-	LE	gm	LE	-
FZ	-	-	GO	df	GO	-	LE	gm	LE	-

A	1		2		3		4		5	
ORIGIN(E) DESTINATION	**FZAA Kinshasa N'Djili**		**GABS Bamako Senou**		**GBYD Banjul**		**GCCC Las Palmas**		**GEML Melila**	
GA	FC	fa	-	-	GO	-	LE	gm	LE	-
GB	FC	fa	GO	df	-	-	LE	gm	LE	-
GC	FC	fa	GO	df	GO	-	-	-	LE	-
GE	FC	fa	GO	df	GO	-	LE	gm	-	-
GF	FC	fa	GO	df	GO	-	LE	gm	LE	-
GG	FC	fa	GO	df	GO	-	LE	gm	LE	-
GL	FC	fa	GO	df	GO	-	LE	gm	LE	-
GM	FC	fa	GO	df	GO	-	GM	go	LE	-
GO	FC	fa	GO	gq	GO	-	LE	gm	LE	-
GQ	FC	fa	GQ	go	GO	-	LE	gm	LE	-
GS	FC	fa	GO	df	GO	-	GM	le	LE	-
GU	FC	fa	GO	df	GO	-	LE	gm	LE	-
GV	FC	fa	GO	df	GO	-	GV	gm	LE	-
H	FA	fc	GO	df	GO	-	LE	gm	LE	-
K	FA	fc	GO	df	GO	-	LE	gm	LE	-
L	FC	fa	GO	df	GO	-	LE	gm	LE	-
M	FA	fc	GO	df	GO	-	LE	gm	LE	-
N	FA	fc	GO	df	GO	-	LE	gm	LE	-
O	FC	fa	GO	di	GO	-	LE	gm	LE	-
P	FA	fc	GO	df	GO	-	LE	gm	LE	-
R	FA	fc	GO	df	GO	-	LE	gm	LE	-
S	FC	fa	GO	df	GO	-	LE	gm	LE	-
T	FC	fa	GO	df	GO	-	LE	gm	LE	-
U	FA	fc	GO	df	GO	-	LE	gm	LE	-
V	FA	fc	GO	df	GO	-	LE	gm	LE	-
W	FA	fc	GO	df	GO	-	LE	gm	LE	-
Y	FA	fc	GO	df	GO	-	LE	gm	LE	-

A	**1**		**2**		**3**		**4**		**5**	
ORIGIN(E) DESTINATION	**FZAA Kinshasa N'Djili**		**GABS Bamako Senou**		**GBYD Banjul**		**GCCC Las Palmas**		**GEML Melila**	
Z	FA	fc	GO	df	GO	-	LE	gm	LE	-

A	1		2		3		4		5	
ORIGIN(E) DESTINATION	**GFLL Freetown**		**GGOV Bissau**		**GLRB Roberts Int.**		**GMMM Casablanca**		**GOOO Dakar**	
A	GU	FNAXYYF	GO	di-	GU	-	LE	da	FA	fc
B	GU	FNAXYYF	GO	di-	GU	-	LE	da	LE	gm
C	GU	FNAXYYF	GO	di-	GU	-	LE	da	LE	gm
DA	GU	FNAXYYF	GO	di-	GU	-	DA	go	GM	dr
DB	GU	FNAXYYF	GO	di-	GU	-	GO	da	DR	fc
DG	GU	FNAXYYF	GO	di-	GU	-	GO	da	DR	di
DF	GU	FNAXYYF	GO	di-	GU	-	GO	da	DR	fc
DI	GU	FNAXYYF	DI	go	GU	-	GO	da	DI	dr
DNK	GU	FNAXYYF	GO	di-	GU	-	GO	da	DR	fc
DNL	GU	FNAXYYF	GO	di	GU	-	GO	da	DR	fc
DR	GU	FNAXYYF	GO	di	GU	-	GO	da	DR	fc
DT	GU	FNAXYYF	GO	di	GU	-	DA	go	GM	dr
DX	GU	FNAXYYF	GO	di	GU	-	GO	da	DR	di
E	GU	FNAXYYF	GO	di	GU	-	LE	da	LE	gm
F(Except FC, FE, FG, FH, FI, FJ, FK, FM FO, FP, FT)	GU	FNAXYYF	GO	di	GU	-	GO	da	FA	fc
FC	GU	FNAXYYF	GO	di	GU	-	GO	da	FC	dr
FE	GU	FNAXYYF	GO	di	GU	-	GO	da	FC	dr
FG	GU	FNAXYYF	GO	di	GU	-	GO	da	FC	dr
FH	GU	FNAXYYF	GO	di	GU	-	LE	da	GM	dr
FI	GU	FNAXYYF	GO	di	GU	-	GO	da	FA	fmm
FJ	GU	FNAXYYF	GO	di	GU	-	LE	da	GM	dr
FK	GU	FNAXYYF	GO	di	GU	-	GO	da	FC	dr
FM	GU	FNAXYYF	GO	di	GU	-	GO	da	FMM	fa
FO	GU	FNAXYYF	GO	di	GU	-	GO	da	FO	fc
FP	GU	FNAXYYF	GO	di	GU	-	GO	da	FC	dr
FS	GU	FNAXYYF	GO	di	GU	-	GO	da	FA	fmm

A	1		2		3		4		5	
ORIGIN(E) DESTINATION	**GFLL Freetown**		**GGOV Bissau**		**GLRB Roberts Int.**		**GMMM Casablanca**		**GOOO Dakar**	
FT	GU	FNAXYYF	GO	di	GU	-	GO	da	DR	fc
GA	GU	FNAXYYF	GO	di	GU	-	GO	da	GA	gq
GB	GU	FNAXYYF	GO	di	GU	-	GO	da	GB	-
GC	GU	FNAXYYF	GO	di	GU	-	GC	le	LE	gm
GE	GU	FNAXYYF	GO	di	GU	-	LE	gc	LE	gm
GF	-	FNAXYYF	GO	di	GU	-	GO	da	GL	-
GG	GU	FNAXYYF	-	-	GU	-	GO	da	GG	di
GL	GU	FNAXYYF	GO	di	-	-	GO	da	GL	
GM	GU	FNAXYYF	GO	di	GU	-	-	-	GM	gq
GO	GU	FNAXYYF	GO	di	GU	-	GO	da	-	-
GQ	GU	FNAXYYF	GO	di	GU	-	GQ	da	GQ	dr
GS	GU	FNAXYYF	GO	di	GU	-	GS	-	GM	gq
GU	GU	FNAXYYF	GO	di	GU	-	GO	da	GL	-
GV	GU	FNAXYYF	GO	di	GU	-	GO	gc	GV	le
H	GU	FNAXYYF	GO	di	GU	-	DA	go	DR	fa
K	GU	FNAXYYF	GO	di	GU	-	LE	da	LE	gm
L	GU	FNAXYYF	GO	di	GU	-	LE	da	LE	gm
M	GU	FNAXYYF	GO	di	GU	-	LE	da	SB	gm
N	GU	FNAXYYF	GO	di	GU	-	DA	go	FA	fc
O	GU	FNAXYYF	GO	di	GU	-	DA	go	DR	fa
P	GU	FNAXYYF	GO	di	GU	-	DA	go	FA	fc
R	GU	FNAXYYF	GO	di	GU	-	DA	go	FA	fc
S	GU	FNAXYYF	GO	di	GU	-	GO	le	SB	fa
T	GU	FNAXYYF	GO	di	GU	-	LE	da	LE	gm
U	GU	FNAXYYF	GO	di	GU	-	LE	da	GM	dr
V	GU	FNAXYYF	GO	di	GU	-	LE	da	FA	fc
W	GU	FNAXYYF	GO	di	GU	-	LE	da	FA	fc
Y	GU	FNAXYYF	GO	di	GU	-	LE	da	FA	fc
		FNAXYYF								

A	**1**		**2**		**3**		**4**		**5**	
ORIGIN(E) DESTINATION	**GFLL Freetown**		**GGOV Bissau**		**GLRB Roberts Int.**		**GMMM Casablanca**		**GOOO Dakar**	
Z	GU		GO	di	GU	-	LE	da	FA	fc

A	1		2		3		4		5	
ORIGIN(E) DESTINATION	**GQNN Nouakchott**		**GSAI El Aioun**		**GUCY Conakry**		**GVAC Sal**		**HAAB Addis Ababa**	
A	GO	dr	GM	-	GO	di	LP	gc	HK	oe
B	GO	gm	GM	-	GO	di	LP	gc	DR	hk
C	GO	gm	GM	-	GO	di	LP	gc	DR	hk
D(except DA, DI, DR)	DR	go	GM	-	GO	di	GO	gc	DR	hk
DA	DA	dr								
DI	DI	go								
DR	DR	go								
E	GO	gm	GM	-	GO	di	LP	gc	OE	hk
FA	GO	dr	GM	-	GO	di	GO	gc	HK	dr
FB	GO	dr	GM	-	GO	di	GO	gc	HK	dr
FC	GO	dr	GM	-	GO	di	GO	gc	DR	hk
FD	GO	dr	GM	-	GO	di	GO	gc	HK	dr
FE	GO	dr	GM	-	GO	di	GO	gc	DR	hk
FG	GO	dr	GM	-	GO	di	GO	gc	DR	hk
FH	GO	gm	GM	-	GO	di	LP	gc	DR	hk
FI	GO	dr	GM	-	GO	di	GO	gc	HK	dr
FJ	GO	gm	GM	-	GO	di	LP	gc	DR	hk
FK	GO	dr	GM	-	GO	di	GO	gc	DR	hk
FL	GO	dr	GM	-	GO	di	GO	gc	HK	dr
FM	GO	dr	GM	-	GO	di	GO	gc	HK	dr
FN	GO	dr	GM	-	GO	di	LP	gc	HK	dr
FO	GO	dr	GM	-	GO	di	GO	gc	DR	hk
FP	GO	dr	GM	-	GO	di	LP	gc	HK	dr
FQ	GO	dr	GM	-	GO	di	LP	gc	DR	hk
FS	GO	dr	GM	-	GO	di	GO	gc	HK	dr
FT	DR	go	GM	-	GO	di	GO	gc	DR	hk
FV	GO	dr	GM	-	GO	di	GO	gc	HK	dr
FW	GO	dr	GM	-	GO	di	GO	gc	HK	dr

A	1		2		3		4		5	
ORIGIN(E) DESTINATION	**GQNN Nouakchott**		**GSAI El Aioun**		**GUCY Conakry**		**GVAC Sal**		**HAAB Addis Ababa**	
FX	GO	dr	GM	-	GO	di	GO	gc	HK	dr
FY	GO	dr	GM	-	GO	di	GO	gc	HK	dr
FZ	GO	dr	GM	-	GO	di	GO	gc	DR	dr
GA	GA	go	GM	-	GO	di	GO	gc	DR	hk
GB	GO	dr	GM	-	GO	di	GO	gc	DR	hk
GC	GO	gm	GM	-	GO	di	GC	go	DR	hk
GE	GO	gm	GM	-	GF	di	GC	go	DR	hk
GF	GO	dr	GM	-	GF	di	GO	gc	DR	hk
GG	GO	dr	GM	-	GO	di	GO	gc	DR	hk
GL	GO	dr	GM	-	GL	di	GO	gc	DR	hk
GM	GM	go	GM	-	GO	di	GO	gc	DR	hk
GO	GO	dr	GM	-	GO	di	GO	gc	DR	hk
GQ	-	-	GM	-	GO	di	GO	gc	DR	hk
GS	GM	go	-	-	GO	di	GO	gc	DR	hk
GU	GO	dr	GM	-	-	-	GO	gc	DR	hk
GV	GO	dr	GM	-	GO	di	-	-	DR	hk
HA	DR	go	GM	-	GO	di	GO	gc	-	-
HB	DR	go	GM	-	GO	di	GO	gc	HK	oe
HC	DR	go	GM	-	GO	di	GO	gc	HK	oe
HD	DR	go	GM	-	GO	di	GO	gc	HD	-
HE	DR	go	GM	-	GO	di	GO	gc	HK	oe
HH	DR	go	GM	-	GO	di	GO	gc	OE	hk
HK	DR	go	GM	-	GO	di	GO	gc	HK	oe
HL	DR	go	GM	-	GO	di	GO	gc	DR	oe
HR	DR	go	GM	-	GO	di	GO	gc	HK	oe
HS	DR	go	GM	-	GO	di	GO	gc	OE	hk
HT	DR	go	GM	-	GO	di	GO	gc	HK	oe
HU	DR	go	GM	-	GO	di	GO	gc	HK	oe

A	**1**		**2**		**3**		**4**		**5**	
ORIGIN(E) DESTINATION	**GQNN Nouakchott**		**GSAI El Aioun**		**GUCY Conakry**		**GVAC Sal**		**HAAB Addis Ababa**	
K	GO	gm	GM	-	GO	di	LP	gc	DR	hk
L	GO	gm	GM	-	GO	di	LP	gc	HK	dr
M	GO	gm	GM	-	GO	di	LP	gc	DR	hk
N	GO	gm	GM	-	GO	di	GO	gc	OE	hk
O	DR	go	GM	-	GO	di	GO	gc	OE	hk
P	GO	dr	GM	-	GO	di	GO	gc	OE	hk
R	GO	dr	GM	-	GO	di	GO	gc	OE	hk
S	GO	dr	GM	-	GO	di	GO	gc	DR	hk
T	GO	gm	GM	-	GO	di	LP	gc	DR	hk
U	GO	gm	GM	-	GO	di	LP	gc	OE	hk
V	GO	dr	GM	-	GO	di	GO	gc	OE	hk
W	GO	dr	GM	-	GO	di	GO	gc	OE	hk
Y	GO	dr	GM	-	GO	di	GO	gc	HK	oe
Z	GO	dr	GM	-	GO	di	GO	gc	OE	hk

A	1		2		3		4		5	
ORIGIN(E) DESTINATION	**HBBA Bujumbura**		**HCMM Mogadiscio**		**HECA Cairo**		**HDAM Djibouti**		**HKNA Nairobi**	
A	FA	hr	HK	nboxyyf	OE	ol	HA	-	FA	va
B	FA	hr	HK	nboxyyf	LG	ol	HA	-	HE	ha
C	FA	hr	HK	nboxyyf	LG	ol	HA	-	FA	va
D(Except. DA,DT)	FA	hr	HK	nboxyyf	DT	lg	HA	-	HA	fa
DA	FA	hr	HK	nboxyyf	DT	lg	HA	-	HE	fa
DT	FA	hr	HK	nboxyyf	DT	lg	HA	-	HE	fa
E	FA	hr	HK	nboxyyf	LG	ol	HA	-	HE	fa
FA	FA	hr	HK	nboxyyf	HK	dt	HA	-	FA	fi
FB	FA	hr	HK	nboxyyf	HK	dt	HA	-	FA	fi
FC	FA	hr	HK	nboxyyf	HK	dt	HA	-	HA	fa
FD	FA	hr	HK	nboxyyf	HK	dt	HA	-	FA	fi
FE	FA	hr	HK	nboxyyf	HK	dt	HA	-	HA	fa
FG	FA	hr	HK	nboxyyf	HK	dt	HA	-	HA	fa
FH	FA	hr	HK	nboxyyf	LG	ol	HA	-	HE	fa
FI	FA	hr	HK	nboxyyf	HK	oe	HA	-	FI	fa
FJ	FA	hr	HK	nboxyyf	LG	dt	HA	-	HE	fa
FK	FA	hr	HK	nboxyyf	HK	dt	HA	-	HA	fa
FL	FA	hr	HK	nboxyyf	HK	dt	HA	-	FA	fi
FM	FA	hr	HK	nboxyyf	HK	dt	HA	-	FI	fa
FN	FA	hr	HK	nboxyyf	HK	dt	HA	-	FA	fi
FO	FA	hr	HK	nboxyyf	HK	dt	HA	-	HA	fa
FP	FA	hr	HK	nboxyyf	HK	dt	HA	-	HA	fa
FQ	FA	hr	HK	nboxyyf	HK	dt	HA	-	FA	fi
FS	FA	hr	HK	nboxyyf	HK	dt	HA	-	FS	va
FT	FA	hr	HK	nboxyyf	HK	dt	HA	-	HA	fa
FV	FA	hr	HK	nboxyyf	HK	dt	HA	-	FA	fi
FW	FA	hr	HK	nboxyyf	HK	dt	HA	-	FA	fi

A	1		2		3		4		5	
ORIGIN(E) DESTINATION	**HBBA Bujumbura**		**HCMM Mogadiscio**		**HECA Cairo**		**HDAM Djibouti**		**HKNA Nairobi**	
FX	FA	hr	HK	nboxyyf	HK	dt	HA	-	FA	fi
FY	FA	hr	HK	nboxyyf	HK	dt	HA	-	FA	fi
FZ	FA	hr	HK	nboxyyf	HK	dt	HA	-	FA	fi
G	FA	hr	HK	nboxyyf	DT	lg	HA	-	HA	fa
HA	FA	hr	HK	nboxyyf	OE	hk	HA	-	HA	he
HB	-	-	HK	nboxyyf	HK	oe	HA	-	FA	fi
HC	FA	hr	-	-	HK	oe	HA	-	HC	-
HE	FA	hr	HK	nboxyyf	-	-	HA	-	HE	ha
HD	FA	hr	HK	nboxyyf	OE	hk	-	-	HA	he
HH	FA	hr	HK	nboxyyf addxtyf	HH	oe	HA	-	HE	-
HK	FA	hr	HK	nboxyyf	HK	oe	HA	-	-	-
HL	FA	hr	HK	nboxyyf	HL	dt	HA	-	HE	ha
HR	FA	hr	HK	nboxyyf	HK	oe	HA	-	FA	fi
HS	FA	hr	HK	nboxyyf	HS	oe	HA	-	HE	ha
HT	FA	hr	HK	nboxyyf	HK	oe	HA	-	HT	fa
HU	FA	hr	HK	nboxyyf	HK	oe	HA	-	HU	ht
K	FA	hr	HK	nboxyyf	LG	ol	HA	-	HE	ha
L(Except LL)	FA	hr	HK	nboxyyf	LG	ol	HA	-	HE	ha
LL	FA	hr	HK	nboxyyf	LL	lg	HA	-	HE	va
M	FA	hr	HK	nboxyyf	LG	ol	HA	-	FA	va
N	FA	hr	HK	nboxyyf	OE	ol	HA	-	FA	va
O (Except OJ, OL and OS)	FA	hr	HK	nboxyyf	OE	ol	HA	-	HA	he
OJ	FA	hr	HK	nboxyyf	OJ	-	HA	-	HE	ha
OL	FA	hr	HK	nboxyyf	LG	-	HA	-	HE	ha
OS	FA	hr	HK	nboxyyf	OS	oj	HA	-	HE	ha

A	**1**		**2**		**3**		**4**		**5**	
ORIGIN(E) DESTINATION	**HBBA Bujumbura**		**HCMM Mogadiscio**		**HECA Cairo**		**HDAM Djibouti**		**HKNA Nairobi**	
P	FA	hr	HK	nboxyyf	OL	lg	HA	-	FA	va
R	FA	hr	HK	nboxyyf	OE	ol	HA	-	FA	va
S	FA	hr	HK	nboxyyf	LG	ol	HA	-	FA	he
T	FA	hr	HK	nboxyyf	LG	ol	HA	-	FA	he
U	FA	hr	HK	nboxyyf	LG	ol	HA	-	FA	va
V (Except VA, VE, VI, VN, VO, VQ)	FA	hr	HK	nboxyyf	OE	ol	HA	-	FA	va
VA	FA	hr	HK	nboxyyf	OE	ol	HA	-	VA	fa
VE	FA	hr	HK	nboxyyf	OE	ol	HA	-	VA	fa
VI	FA	hr	HK	nboxyyf	OE	ol	HA	-	VA	fa
VN	FA	hr	HK	nboxyyf	OE	ol	HA	-	VA	fa
VO	FA	hr	HK	nboxyyf	OE	ol	HA	-	VA	fa
VQ	FA	hr	HK	nboxyyf	OE	ol	HA	-	VA	fa
W	FA	hr	HK	nboxyyf	OE	ol	HA	-	FA	va
Y	FA	hr	HK	nboxyyf	OE	ol	HA	-	FA	va
Z	FA	hr	HK	nboxyyf	OE	ol	HA	-	FA	va

A	1		2		3		4		5	
ORIGIN(E) DESTINATION	**HLLT Tripoli**		**HRYR Kigali**		**HSSS Khartoum**		**HTDA Dar es Salaam**		**HUEN Entebbe**	
A	DT	he	FA	hb	HE	oe	FA	hk	HK	-
B	DT	he	FA	hb	HE	oe	HK	fa	HK	-
C	DT	he	FA	hb	HE	oe	FA	hk	HK	-
D	DT	he	FA	hb	HE	oe	FA	hk	HK	-
DR	DR	dt								
E	DT	he	FA	hb	HE	oe	HK	fa	HK	-
F(Except FS)	DT	he	FA	hb	HE	oe	FA	hk	HK	-
FS	DT	he	FA	hb	HE	oe	HK	fa	HK	-
FT	FT	dr	-	-	FT	oe	-	-	-	-
G	DT	he	FA	hb	HE	oe	FA	hk	HK	-
HA	DT	he	FA	hb	OE	he	HK	fa	HK	-
HB	DT	he	FA	hb	OE	he	FA	hk	HK	-
HC	DT	he	FA	hb	OE	he	HK	fa	HK	-
HD	DT	he	FA	hb	OE	he	HK	fa	HK	-
HE	HE	dt	FA	hb	HE	oe	HK	fa	HK	-
HH	DT	he	FA	hb	HE	oe	HK	fa	HK	-
HK	DT	he	FA	hb	HE	oe	HK	fa	HK	-
HL	-	-	FA	hb	HE	oe	HK	fa	HK	-
HR	DT	he	-		HE	oe	FA	hk	HK	-
HS	DT	he	FA	hb	-	-	HK	fa	HK	-
HT	DT	he	HT	hb	HE	oe	-	-	HK	-
HU	DT	he	HU	hb	HE	oe	HK	fa	-	
K	DT	he	FA	hb	HE	oe	FA	hk	HK	-
L	DT	he	FA	hb	HE	oe	HK	fa	HK	-
M	DT	he	FA	hb	HE	oe	FA	hk	HK	-
N	DT	he	FA	hb	HE	oe	FA	hk	HK	-
O (Except OE, OO, OY)	DT	he	FA	hb	HE	oe	HK	fa	HK	-

A	1		2		3		4		5	
ORIGIN(E) DESTINATION	**HLLT Tripoli**		**HRYR Kigali**		**HSSS Khartoum**		**HTDA Dar es Salaam**		**HUEN Entebbe**	
OE	DT	he	FA	hb	HE	oe	HK	fa	HK	-
OO	DT	he	FA	hb	OE	he	HK	fa	HK	-
OY	DT	he	FA	hb	OE	he	HK	fa	HK	-
P	DT	he	FA	hb	HE	oe	FA	hk	HK	-
R	DT	he	FA	hb	HE	oe	FA	hk	HK	-
S	DT	he	FA	hb	HE	oe	FA	hk	HK	-
T	DT	he	FA	hb	HE	oe	FA	hk	HK	-
U	DT	he	FA	hb	HE	oe	FA	hk	HK	-
V	DT	he	FA	hb	HE	oe	FA	hk	HK	-
W	DT	he	FA	hb	HE	oe	FA	hk	HK	-
Y	DT	he	FA	hb	HE	oe	FA	hk	HK	-
Z	DT	he	FA	hb	HE	oe	FA	hk	HK	-

A	1		2		3		4		5	
ORIGIN(E) DESTINATION	**HHAS Asmara**		**FZNA Goma**		**FQMA Maputo**					
A	HE	nboxyyf	HB	-	FA	fqb				
B	HE	nboxyyf	HB	-	FA	fqb				
C	HE	nboxyyf	HB	-	FA	fqb				
D	HE	nboxyyf	HB	-	FA	fqb				
E	HE	nboxyyf	HB	-	FA	fqb				
F	HE	nboxyyf	HB	-	FA	fqb				
G	HE	nboxyyf	HB	-	FA	fqb				
HA	HE	nboxyyf	HB	-	FA	fqb				
HB	HE	nboxyyf	HB	-	FA	fqb				
HC	HE	nboxyyf	HB	-	FA	fqb				

HE	HE	nboxyyf	HB	-	FA	fqb				
HF	HE	nboxyyf	HB	-	FA	fqb				
HH	-	-	HB	-	FA	fqb				
HK	HE	nboxyyf	HB	-	FA	fqb				
HL	HE	nboxyyf	HB	-	FA	fqb				
HR	HE	nboxyyf	HB	-	FA	fqb				
HS	HE	nboxyyf	HB	-	FA	fqb				
HT	HE	nboxyyf	HB	-	FA	fqb				
HU	HE	nboxyyf	HB	-	FA	fqb				
K	HE	nboxyyf	HB	-	FA	fqb				
L	HE	nboxyyf	HB	-	FN	fa				
M	HE	nboxyyf	HB	-	FN	fa				
N	HE	nboxyyf	HB	-	FA	fqb				
O	HE	nboxyyf	HB	-	FA	fqb				
P	HE	nboxyyf	HB	-	FA	fqb				
R	HE	nboxyyf	HB	-	FA	fqb				
S	HE	nboxyyf	HB	-	FA	fqb				

A	**1**	**2**	**3**	**4**	**5**		**1**	**2**	**3**	**4**
ORIGIN(E) DESTINATION	**HHAS Asmara**		**FZNA Goma**		**FQMA Maputo**					
T	HE	nboxyyf	HB	-	FA	fqb				
U	HE	nboxyyf	HB	-	FA	fqb				
V	HE	nboxyyf	HB	-	FA	fqb				
W	HE	nboxyyf	HB	-	FA	fqb				
Y	HE	nboxyyf	HB	-	FA	fqb				
Z	HE	nboxyyf	HB	-	FA	fqb				