

# INTERNATIONAL CIVIL AVIATION ORGANIZATION



## ROBEX HANDBOOK

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**Glossary of Abbreviations**

ACC	Area control centre
ADMIN	Administrative message
AFI	Africa-Indian Ocean Region
AFS	Aeronautical Fixed Service
AFTN	Aeronautical Fixed Telecommunication Network
AIREP	Air-report
AMD	Amended (for TAF)
AMHS	ATS Message Handling System
AMO	Aerodrome meteorological office
AMS	Aeronautical Meteorological Station
ANP	Air Navigation Plans
AOP	Aerodrome Operations
APANPIRG	Asia/Pacific Air Navigation Planning and Implementation Regional Group
ARS	Special Air-report indicator
ATS	Air traffic services
BCC	Bulletin compiling centre
COM	Communications
CTA	Control Area
FASID	Facilities and services implementation document
FIR	Flight information region
HF	High Frequency
ICD	Interface Control Document
IROG	Inter-regional OPMET gateway
ISCS	International Satellite Communication System
MID	Middle East Region
MIDANPIRG	Middle East Air Navigation Planning and Implementation Regional Group
MWO	Meteorological watch office
NOC	National OPMET centre
OPMET	Operational meteorological
PAC	Pacific Region
PIRG	Planning and Implementation Regional Group

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ROBEX	Regional OPMET Bulletin Exchange
RODB	Regional OPMET data banks
SADIS	Satellite distribution system for information relating to air navigation
SUG	SADIS User Guide
TC	Tropical cyclone
TCA	Tropical cyclone advisory
TCAC	Tropical Cyclone Advisory Centre
VA	Volcanic ash
VAA	Volcanic ash advisory
VAAC	Volcanic Ash Advisory Centre
WAFC	World Area Forecast Centre
WMO	World Meteorology Organization

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## 1. INTRODUCTION

- 1.1 The Regional Operational Meteorological (OPMET) Bulletin Exchange (ROBEX) scheme was established by the MID/SEA COM/MET Regional Planning Group at its first meeting, July 1972, Bangkok. The scheme became operational in 1974 and has since been successfully serving the ASIA/PAC and MID ICAO Regions in the exchange of the required OPMET information.
- 1.2 ROBEX scheme was intended initially only for METAR exchange; AIREP and TAF exchanges were added to the scheme at a later stage. The operation of the ROBEX 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 Main Collection Centres or Sub-collection Centres, or TAF Collection Centres. The operational exchange has been carried out according to agreed transmission schedules; the bulletin contents were specified in the ROBEX Handbook.
- 1.3 Based on COM facilities of very limited capacity in the early seventies, the ROBEX 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 ROBEX scheme has been developing accordingly.
- 1.4 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, APANPIRG adopted conclusions that called for further development of the ROBEX scheme according to the new operational requirements.
- 1.5 The ROBEX Handbook is the main guidance material providing detail on the procedures for OPMET exchange under the ROBEX scheme. The Handbook defines the responsibilities of the ROBEX centres and the procedures to be followed. It defines also the content and format of the ROBEX bulletins.
- 1.6 The ROBEX Handbook is published and kept up-to-date by the ICAO Office, Bangkok in coordination with ICAO Office, Cairo.

## 2. ROBEX SCHEME – GENERAL

### 2.1 Objective

2.1.1 The main purpose of the Regional Operational Meteorological Bulletin Exchange (ROBEX) Scheme is to:

- ensure **the most efficient exchange of OPMET information within the ASIA/PAC and MID Regions as well as with the other ICAO regions** to meet the requirements by the 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 ASIA/PAC and MID Air Navigation Plans (ANP) in a highly efficient and standardized way.

### 2.2 Structure

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

### 2.3 Products

2.3.1 The ROBEX scheme produces and delivers to the aviation users the required OPMET information in the form of predefined **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 the users.

### 2.4 Management

2.4.1 Monitoring of the OPMET exchange under the ROBEX Scheme, planning for improvements and preparation of proposals for any changes of the Scheme, that may become necessary, are carried out by the ASIA/PAC Air Navigation Planning and Implementation Regional Group (APANPIRG) and the Middle East Air Navigation Planning and Implementation Regional Group (MIDANPIRG). In order to achieve these tasks, the ROBEX implementation status and planning is part of the agenda of the CNS/MET sub-groups of the two PIRGs.

*Note: When necessary, supplementary expert groups can be established by the PIRGs or the CNS/MET Sub-groups to deal with OPMET specific issues. The OPMET Management Task Force, established by APANPIRG/13 is currently tasked to deal with all OPMET related issues in the ASIA/PAC region.*

2.4.2 Any proposals for amendments to the ROBEX scheme, which States or international organizations concerned consider necessary, due to changes in the operational requirements for OPMET data or to developments of the AFS system, should be forwarded for consideration by the ICAO Asia and Pacific Office, Bangkok and/or the ICAO Middle East Office, Cairo.

## **2.5 Documentation**

- 2.5.1 The ROBEX Handbook is the main guidance material related to the ROBEX scheme. It should be kept up-to-date by the ICAO Asia and Pacific Office, Bangkok in coordination with the ICAO Middle East Office, Cairo.
- 2.5.2 The ASIA/PAC 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. This document at present covers only ASIA/PAC Region. The ICD should also be kept up-to date by the ICAO Asia and Pacific Office, Bangkok.

*Note: –The MID Region is served by the international OPMET data bank in Vienna.*

### 3 OPMET INFORMATION AND OPMET EXCHANGE

#### 3.1 OPMET data types

3.1.1 The following OPMET data types should be handled by the ROBEX scheme:

Data type	Abbreviated name	WMO data type designator
Aerodrome reports	METAR SPECI	SA SP
Aerodrome forecasts	TAF: 12 to 30 hour 9 hour	FT FC
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

*Note that IATA TAF requirements in the ASIA/PAC region are for TAF validity of either 24 or 30 hours. Some States issue 12- and 18-hour TAF which don't meet requirements, but are nevertheless classified as FT for the WMO data type designator.*

#### 3.2 OPMET bulletins

3.2.1 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.

3.2.2 The format of OPMET bulletins is determined by:

- *ICAO Annex 10, Aeronautical telecommunications*, as regards the AFTN 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.

#### 3.3 Types of OPMET exchange

##### 3.3.1 *Regional exchange – ROBEX scheme*

3.3.1.1 The ROBEX scheme covers the exchange of OPMET information in the ASIA, PAC and MID ICAO regions. It includes several types of exchanges as described below.

3.3.1.1.1 *Regular Exchange under ROBEX.* 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.

3.3.1.1.2 *Non-regular exchange.* This includes:

- a) *Exchange on request (request-reply service).* The RODBs store OPMET data and make them available on request.
- b) *Exchange of non-routine reports:* SPECI; TAF AMD; SIGMET; TCA and VAA; ADMIN messages.

3.3.2 *Inter-regional OPMET exchange*

3.3.2.1 Exchange of OPMET data between the ASIA/PAC, MID 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 specified OPMET data between ASIA/PAC and every other ICAO region for which ASIA/PAC OPMET data are required.

*Note: The former name of these centres is ODREP.*

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

3.3.3 *Exchange of OPMET information through the satellite segment of the AFS*

3.3.3.1 The three satellite broadcasts provided by the United Kingdom (Satellite distribution system for aeronautical information relating to air navigation - SADIS) and the United States (International Satellite Communication System – ISCS/1 and ISCS/2), form 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.

3.3.3.2 All ASIA/PAC and MID OPMET data handled by the ROBEX scheme should be relayed to the SADIS and ISCS service providers for uplink through SADIS and ISCS.

3.3.4 *Other OPMET exchanges*

3.3.4.1 Where OPMET exchanges described in the above paragraphs are not sufficient, direct AFTN addressing should be utilized by the originating centres or NOCs.

## 4 COMPOSITION OF ROBEX

4.1 ROBEX 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 ROBEX scheme:

4.1.1 **Originating station** – 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.

4.1.2 **National OPMET center (NOC)**. Normally, a NOC is associated with the State's national AFTN 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 ROBEX bulletin compiling center (ROBEX BCC). Some NOCs serve also as ROBEX BCCs. National regulations should be developed to ensure that NOCs disseminate the international OPMET data within their own State, as necessary.

4.1.3 **ROBEX bulletin compiling centre (ROBEX BCC or, in brief, ROBEX centre)**.

4.1.3.1 ROBEX centres are responsible for collection of OPMET messages from the originating stations or NOCs in their area of responsibility and for compiling these messages into ROBEX bulletins. Tables A and B of the ROBEX Handbook determine the areas of responsibility (or, collection areas) of the ROBEX centres for METAR/SPECI and TAF.

4.1.3.2 The ROBEX centres are responsible for the transmission of the bulletins compiled by them to:

- other ROBEX centres, according to predefined distribution lists, specific for each bulletin;
- ASIA/PAC RODBs;
- NOCs or other COM or MET offices in the States in their area of responsibilities, as agreed between the ROBEX centre and the States' authorities concerned.

*Note: The former ROBEX scheme involved separate compiling centres for METAR and TAF (METAR collection centres, and TAF collection centres). In some cases, METAR from an aerodrome was compiled by one METAR collection centre, and the TAF from another TAF collection centre. The evolution of ROBEX should be towards unified ROBEX centers responsible for collecting/distributing of all OPMET data types within their area of responsibility.*

4.1.4 **Regional OPMET Data Banks (RODB)**

4.1.4.1 Five centres have been designated by APANPIRG (APANPIRG Conclusions 4/35 and 5/21 (1994)), to serve as Regional OPMET Data Banks: Bangkok, Brisbane, Nadi, Singapore and Tokyo. The Asia/Pacific OPMET data banks interface control document reflects the requirements for the operation of the ASIA/PAC OPMET data banks to support the ROBEX Scheme.

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

- to support the ROBEX Scheme and to facilitate a regular exchange of OPMET information based on predetermined distribution within the ASIA/PAC Regions;
- to operate as Inter-regional OPMET Gateway (IROG) with responsibility of exchanging OPMET information between ASIA/PAC Region and the adjacent Regions; and
- 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 “ASIA/PAC Regional Interface Control Document (ICD) - OPMET Data Bank Access Procedures”, published and maintained by the ICAO Asia and Pacific Office, Bangkok.*

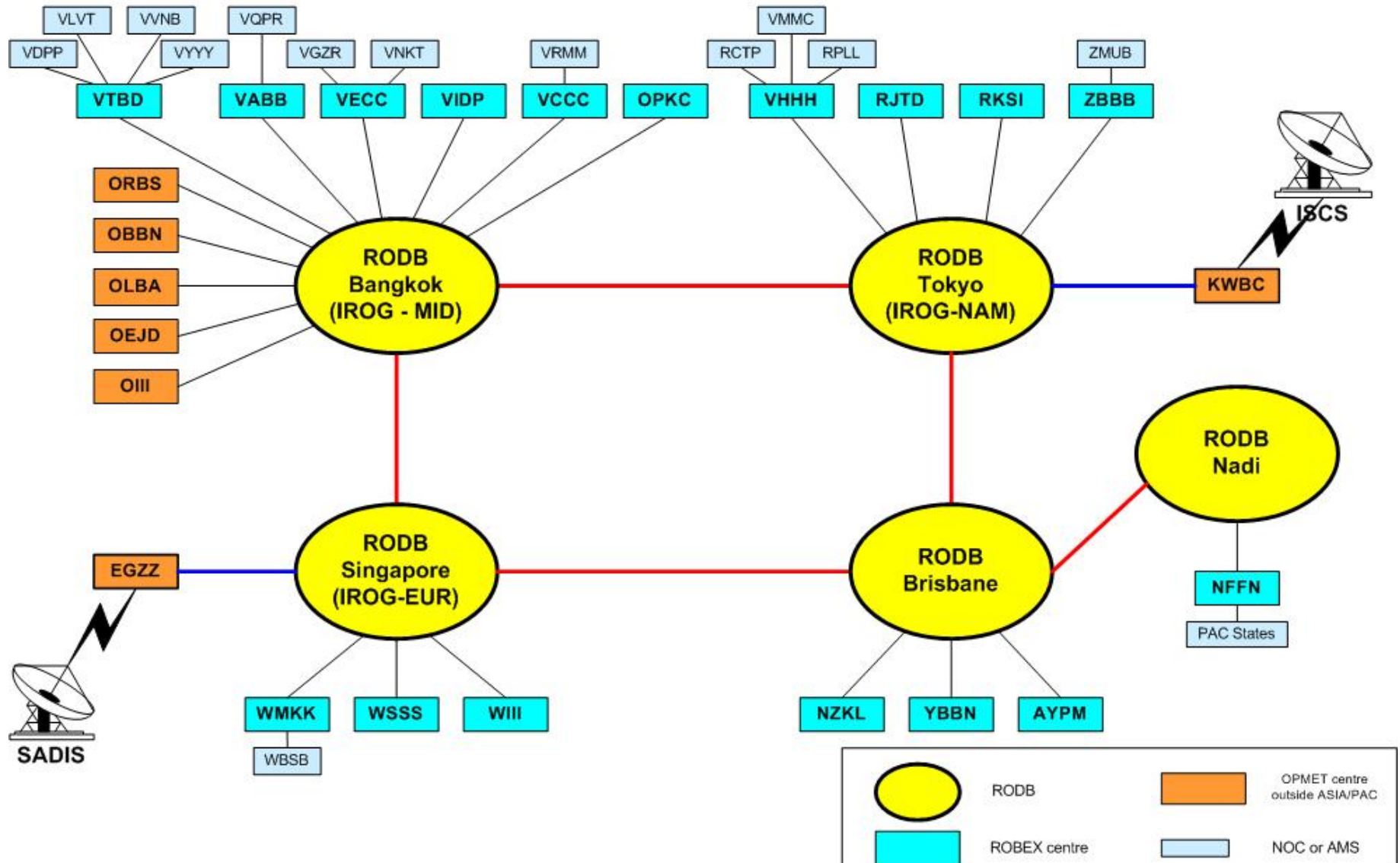
*Note – responsibilities of RODBs are given in 4.1.4.2, 10.2, 10.3 and 12.3*

4.1.5 **Inter-regional OPMET Gateways (IROG).** The Inter-regional OPMET Gateways in ASIA/PAC Region are the designated RODBs. Each RODB is assigned responsibility for exchange of OPMET information with other ICAO Regions. The responsibilities of the IROGs for ASIA/PAC and MID Region are shown in p. 11.1 of this Handbook.

4.1.6 **Support to SADIS and ISCS satellite broadcasts.** The RODBs and IROGs should facilitate the global exchange of OPMET data carried out through the SADIS and ISCS satellite broadcasts. In order to achieve this, close liaison should be maintained between the IROGs and the corresponding SADIS and ISCS gateways. Availability of ASIA/PAC and MID data on SADIS and ISCS should be monitored and any systematic shortfalls of data identified should be reported to the relevant ICAO regional office.

4.2 The overall structure of the ROBEX scheme and AFTN plan (Chart CNS 1) is presented in the following figures.

# ROBEX SCHEME





## 5 COMMUNICATIONS - GENERAL

5.1 According to Annex 3, 11.1.9, “the telecommunication facilities used for the exchange of operational meteorological information should be the aeronautical fixed service”. The use of the AFS for the OPMET exchange encompasses two components:

- use of terrestrial AFTN circuits; and
- use of satellite distribution systems – SADIS and ISCS broadcasts.

### 5.2 Use of AFTN

5.2.1 In the ROBEX scheme AFTN circuits are used for collection of the OPMET messages by the ROBEX 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.

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

5.2.3 **Transit times** of the AFTN messages and bulletins containing OPMET information are specified in Annex 3, Appendix 10, 1.1.

5.2.4 OPMET bulletins transmitted via AFTN should use the following **priority indicators**:

- SIGMET, AIREP SPECIAL (special air-reports), VAA, TCA and TAF AMD – priority indicator **FF** used for flight safety messages (cf. Annex 10 Vol. II, 4.4.1.1.3);
- TAF, METAR and SPECI – priority indicator **GG** used for meteorological messages (cf. Annex 10 Vol. II, 4.4.1.1.4).

5.2.5 **Filing times** of the bulletins should be according to Annex 3, Appendix 10, 2.1.2.

### 5.3 Use of SADIS and ISCS

5.3.1 SADIS and ISCS satellite broadcasts are used by the authorized users in the States for receiving global OPMET data.

5.3.2 The lists of authorized users of the SADIS and ISCS2 satellite broadcasts in the ASIA/PAC regions and location of the operational VSATs are available from the following websites: [www.icao.int/anb/sadisopsg](http://www.icao.int/anb/sadisopsg) (click: “Status of implementation”) for SADIS [www.weather.gov/iscs](http://www.weather.gov/iscs) (click: “Documents” and “Status of implementation of ISCS listed by ICAO regions”) for ISCS

### 5.4 Use of Internet

5.4.1 Amendment 75 to Annex 3, paragraph 11.1.9 allows the use of the Internet for non-time critical OPMET information

5.4.2 The Basic ANP, paragraph 34 allows for the retrieval of WAFCs forecasts using the SADIS FTP or ISCS FTP service.

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- 5.4.3 RODB Singapore has enabled the use of email for sending and retrieving OPMET data (see WP/16 to OPMET/M TF/8 meeting for details)
- 5.4.4 Guidance on the use of the Internet is provided in ICAO Doc 9855.
- 5.5 Transition to Aeronautical Telecommunication Network (ATN)
- 5.5.1 In accordance with Conclusion 19/20 adopted by the Nineteenth Meeting of APANPIRG held in 2008, the transition from AFTN to ground/ground element of Aeronautical Telecommunication Network (ATN) over IPS and OSI in the Asia and Pacific regions is expected to be completed by 2011. The ground/ground application – AMHS, will be gradually employed to replace AFTN switches by States in the region. During the transition period, the conventional messages, exchanged through AFTN, including OPMET messages, will be continually supported by address conversion to AMHS format and vice versa. No changes would be made to the format and contents of text part of AFTN messages carried over by AMHS. Inter-regional exchanges of OPMET bulletins will be via AFTN or AMHS during the transition period.

## **6. METAR/SPECI EXCHANGE**

### **6.1 General**

6.1.1 Hourly METAR reports should be prepared by all international aerodromes listed in FASID Table MET 1A. METAR should be issued on half-hour intervals for those aerodromes, included in the HF VOLMET broadcasts (cf. FASID Table ATS 2 – HF Radiotelephony VOLMET Broadcasts), or D-VOLMET.

6.1.2 METAR from all international aerodromes listed in Table AOP 1 of the Basic ANP and, respectively, in FASID Table MET 1A, should be included in the regular ROBEX exchange. In addition, METAR from a number of domestic aerodromes, required by the users, should also be included in the regular ROBEX exchange, 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.*

6.1.3 Description of the ASIA/PAC and MID METAR bulletins included in the regular ROBEX exchange, containing the responsible compiling ROBEX centre, WMO bulletin identification, and the list of aerodromes included in the bulletin, is given in **Appendix A**.

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

6.1.5 All METAR bulletins should be sent to the following RODBs: Bangkok, Brisbane, Singapore and Tokyo. ROBEX centres should exchange METAR bulletins according to the distribution lists given in **Appendix A**.

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

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

### **6.2 Responsibilities of originating stations and NOCs**

6.2.1 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 ROBEX center.

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

6.2.3 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*).

- 6.2.4 METAR messages should be sent to the responsible ROBEX centre before the cut-off time specified by the ROBEX 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.
- 6.2.5 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 E**.*

### **6.3 Responsibilities of ROBEX centres**

- 6.3.1 ROBEX 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.
- 6.3.2 ROBEX 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 ROBEX centre should compile METAR bulletin(s) containing all prescribed aerodromes, indicating any missing METAR with “NIL”.
- 6.3.3 At scheduled transmission times ROBEX centres should transmit the compiled METAR bulletins to other ROBEX 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.
- 6.3.4 ROBEX centres should transmit the METAR bulletins compiled by them, as well as bulletins received from other ROBEX centres, as necessary, to the NOCs and/or other offices in the States in their area of responsibility, as agreed between the ROBEX centre and the meteorological authorities of the States concerned.
- 6.3.5 A SPECI when received by a ROBEX 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.
- 6.3.6 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.
- 6.3.7 A METAR message received by the ROBEX centre after the scheduled transmission of the corresponding bulletin is a delayed METAR. The ROBEX 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.).

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

#### 6.4 Format and content of METAR bulletins

- 6.4.1 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.

- 6.4.2 The following is an example of the format to be applied in preparing a METAR bulletin by the ROBEX centre:

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

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

- 6.4.3 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 E**.

- 6.4.4 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=*

#### 6.5 Format and content of SPECI bulletins

- 6.5.1 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.

- 6.5.2 The following is an example of the format to be applied in preparing a SPECI bulletin by the ROBEX centre:

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

## 7. TAF EXCHANGE

### 7.1 General

7.1.1 Aerodrome forecast (TAF) should be prepared by the aerodrome meteorological offices (AMO) 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 ASIA/PAC and MID ANPs.

7.1.2 All TAFs required should be included in the regular ROBEX exchange. In addition, TAFs from a number of other, including domestic aerodromes, required by the users, should also be included in the regular ROBEX exchange, if so agreed by the States concerned.

Notes:

- 1) *The recent requirement by airlines is that TAF for all international aerodromes listed in ASIA/PAC and MID FASID Table MET 1A should be available through regular exchange and through the satellite distribution systems SADIS and ISCS.*
- 2) *See the note under p. 6.1.2*

7.1.3 TAF exchanges not covered by the ROBEX Scheme, but required operationally, should be met by means of direct addressed AFTN messages.

7.1.4 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. Note that some States issue 12 and 18 hour TAFs and are by definition "long" TAF, but they do not meet the IATA requirements of 24 or 30-hour TAF. "Short" TAFs with 9-hour period of validity (WMO data designator - FC), are no longer issued by States in the ASIA/PAC Region, but are included in the ROBEX scheme in other regions (i.e. EUR). The 9-hour TAFs are extracted from the long TAF for some aerodromes in the ASIA/PAC region for the use in HF VOLMET. Guidance on the extraction of a short TAF from a long TAF is provided in Doc 9377, *Manual on Coordination between Air Traffic Services, Aeronautical Information Services and Aeronautical Meteorological Services*.

### 7.2 Responsibilities and Procedures to be followed by originating aerodrome meteorological offices (AMO) and NOCs

7.2.1 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 ROBEX center before the cut-off time set up by this centre.

7.2.2 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*).

7.2.3 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 ROBEX centre with no delay. The optional group BBB should be used in the WMO abbreviated heading to indicate amended TAF in accordance with **Appendix E**.

7.2.4 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.

### **7.3 Responsibilities and Procedures to be followed by the ROBEX centres**

7.3.1 ROBEX centres should collect TAFs from the AMOs and/or NOCs in their area of responsibility and compile TAF Bulletins according to **Appendix B**. The areas of responsibility, as far as practicable, should group together aerodromes and their alternates. ROBEX centres should ensure that TAFs within their area of responsibility have common periods of validity.

7.3.2 If necessary, ROBEX centres should prepare two or more separate TAF bulletins using different “ii” values (e.g., “31” and “32”) in the WMO heading. The content of the ROBEX TAF bulletins is specified in **Appendix B**.

7.3.3 ROBEX centres should establish a cut-off time for reception of TAFs from AMOs and/or NOCs in their area of responsibility, e.g., 15 minutes before the filing/transmission times specified in **Appendix B**. At the cut-of time ROBEX centres should compile TAF bulletin(s) containing all prescribed aerodromes, indicating any missing TAF with “NIL”.

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

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

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

7.3.7 A TAF message received by a ROBEX centre after the scheduled transmission of the corresponding bulletin is a delayed TAF. The ROBEX centre should send a delayed TAF bulletin as soon as one or more delayed messages are received or at specified times after the scheduled bulletin time. The optional BBB group should be used in the WMO bulletin heading accordingly.

7.3.8 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.

### **7.4 Format and content of TAF bulletins**

7.4.1 Issuance and period of validity:

7.4.1.1 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.

7.4.1.2 All TAFs in a ROBEX TAF bulletin should have a common period of validity. It is not allowed to mix TAF with different periods of validity in one bulletin.

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

7.4.2 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.

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

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

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

7.4.5 A missing TAF in a TAF bulletin should be indicated with “NIL”, as shown in the following example:

TAF VTBD 281000Z NIL=

7.4.6 A cancelled TAF in a TAF bulletin should be indicated with “CNL”, as shown in the following example:

TAF VTBD 281100Z 2812/2912 CNL=

## 7.5 Summary of OPMET data issuance

7.5.1 In response to APANPIRG/20 Conclusion 20/62, a summary of correct methods of issuing OPMET data are provided in the following two tables:

### METAR observation, compiling and filing

Function	Responsible Entity	Explanation of Time	Time of task (min)
METAR Observation	Originating stations (AMS, AMO, forecast office, MWO, TCAC, VAAC)	State determines how often and when (emphasis on consistency, i.e. 50 minutes past the hour every hour every day) <b>Examples : HH+00, HH+30, HH+10, HH+50</b>  Note that the observation time is used in the METAR report	0
Send METAR observation to NOC	Orig station		
Send METAR observations to ROBEX Centre	NOC		
Bulletin compiling and filing	ROBEX Bulletin Compiling Centre	Up to 5 minutes after actual time of observation  (ref.: Annex 3, App. 10, 2.1.2)  Note that the observation time of the METAR is used in the DTG – YYGGgg of the bulletin header  Note that the filing time is used in the AFTN header and should be up to 5 minutes after the observation time given in the bulletin header also referred to as the WMO Abbreviated Heading in the ROBEX HB	<5
Send METAR bulletin to: ROBEX Centres (predefined distribution list) RODBs NOCs Other MET offices	ROBEX Centre via AFTN	Up to 5 minutes (10 minutes for distances greater than 900 km)  (ref.: Annex 3, App. 10, 1.1)	<5 (<10 for distances > 900 km)
Acceptable time from observation at originating stations to reception by user			<10 (<15 mins for distances > 900 km)

### TAF issuance, compiling and filing

Function	Responsible Entity	Explanation of Time	Time of task (min)
TAF Issuance	AMO or NOC	<p>State determines time of 4 scheduled TAFs (emphasis on consistency, i.e. 00, 06, 12, 18Z every day)</p> <p>Note that issuance time of TAF (which is one hour before the start period of validity of the TAF) is used in the date/time group (DTG) (YYGGggZ) of TAF messages</p> <p>TAF is sent to ROBEX Centre before the cutoff time of accepting TAF for filing one hour before the start period of validity time (typically 15 minutes before filing)</p>	(allow enough time to reach ROBEX Centre before cutoff time)
Bulletin compiling and filing	ROBEX Centre	<p>Bulletins are compiled during the 15 minutes before filing</p> <p>Note that the TAF issuance time (official filing time) is used in the DTG – YYGGgg of the bulletin header</p> <p>Note that the <u>actual</u> filing time is used in the AFTN header and should be after the time given in the bulletin header also referred to as the WMO Abbreviated Heading in the ROBEX HB</p> <p>TAF should be filed for transmission at least one hour before the commencement of their period of validity, unless otherwise determined by regional air navigation agreement.</p> <p>(ref.: Annex 3, App. 10, 2.1.2)</p>	<15
Send TAF bulletin to: ROBEX Centres (predefined distribution list) RODBs NOCs Other MET offices	ROBEX Centre <i>via AFTN</i>	<p>Up to 5 minutes (10 minutes for distances greater than 900 km)</p> <p>(ref.: Annex 3, App. 10, 1.1)</p>	<5 (<10 for distances > 900 km)
Acceptable time for ROBEX BCC compiling and filing to reception by user			<20 (<25 for distances > 900 km)

## 8 EXCHANGE OF SIGMET AND ADVISORIES

- 8.1 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 ASIA/PAC and MID ANPs.
- 8.2 SIGMET messages should be distributed to all RODBs. The RODBs should make SIGMET messages available on request. In order to facilitate that, the originating MWOs should use for their SIGMET bulletins the WMO headings given in the *ASIA/PAC Regional SIGMET Guide*, Appendix H.  
([http://www.bangkok.icao.int/edocs/sigmet\\_guide4.pdf](http://www.bangkok.icao.int/edocs/sigmet_guide4.pdf))
- Note: The required distribution of SIGMET to MWOs and ACCs in the adjacent FIRs as described in the ASIA/PAC Regional SIGMET Guide (p. 3.5.3) is not part of the ROBEX exchange and should be arranged by the States outside the ROBEX scheme.*
- 8.3 SIGMET messages should be distributed to other ICAO regions and made available for uplink through SADIS and ISCS. This distribution should be carried out through the relevant IROGs.
- 8.4 Detailed information on the format of the SIGMET messages is provided in the ASIA/PAC Regional SIGMET Guide.
- 8.5 Tropical cyclone advisories (TCA) and volcanic ash advisories (VAA) 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.
- 8.6 The TCACs and VAACs should send the advisories to the RODBs. The RODBs should make TCAs and VAAs messages available on request. In order to facilitate that, the originating TCACs and VAACs should use for their TCA and VAA bulletins the WMO headings given in the *ASIA/PAC Regional SIGMET Guide*, Appendix I.  
([http://www.bangkok.icao.int/edocs/sigmet\\_guide4.pdf](http://www.bangkok.icao.int/edocs/sigmet_guide4.pdf))
- 8.7 VAA and TCA messages should be distributed to other ICAO regions and made available for uplink through SADIS and ISCS. This distribution should be carried out either directly by the VAACs and TCACs or through the relevant IROGs.

## 9 AIREP/AIREP SPECIAL EXCHANGE

9.1 Section 9 of the ROBEX Handbook used to provide guidance with reference to the collection of routine air reports (AIREP) received by voice communications and special air-reports (AIREP SPECIAL) from aircrafts by meteorological watch offices (MWO) through their associated ATS units. The CNS/MET SG/14 meeting held from 19-22 July 2010 in Jakarta, Indonesia determined that this obligation is no longer necessary by MWOs beginning 18 November 2010 when routine voice reporting of weather will no longer be required as referenced in Amendment 75 to Annex 3. Therefore, Table D to the ROBEX Handbook will become obsolete since dissemination of SPECIAL AIREPS are covered by Annex 3 and are of urgent nature as detailed below:

- Routine voice air-reports – no longer required in Amendment 75 to Annex 3 – currently in Appendix 4, 3.1.1 of Annex 3
- Routine air-reports received by data-link communications should be relayed directly to the WAFCs by the ATS unit - Chapter 5, 5.8 b of Annex 3
- Special voice air-reports – MWO to send to WAFCs without delay – Appendix 4, 3.1.2 of Annex 3
- Special air-reports – for those where SIGMET is not warranted, these reports are disseminated in the same way that SIGMET messages are disseminated without delay in accordance with Appendix 6, 1.2.1 of Annex 3 i.e. to MWOs, WAFCs and other meteorological offices in accordance with regional air navigation agreement - Appendix 4, 3.1.4 of Annex 3
- Special air-reports of pre-eruption volcanic activity – MWO to send to VAACs without delay – Appendix 4, 3.1.3 of Annex 3
- An example of AIREP special is given as follows:

```
FF EGRRVANW KWBCYMYX EGZZMASI RJTDYPYX RKSIPYX VTBBYPYX
WSZZWWBX YBBBYPYX YPDNYMYX ZJSYYMYX
090726 WSSSYMYX
UASR31 WSSS 090700
ARS QFA129 0328N 12831E 0639 FL380 VOLC NBR 0608-01 VOLC DUKONO
DRIFT OF ASH SE PLUME HGT EST FL100 OR LOWER SUP INFO REPORTS
GOOD VISIBILITY=
```

**10 REGIONAL OPMET DATA BANKS (RODB)**

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

<b>RODB</b>	<b>AFTN ADDRESS</b>	<b>ROBEX CENTRES IN THE AREA OF RESPONSIBILITY</b>
Bangkok	VTBBZYX	Bangkok/VTBB Colombo/VCCC Delhi/VIDP Karachi/OPKC Kolkata/VECC Mumbai/VABB Baghdad/ORBS Bahrain/OBBN Beirut/OLBA Jeddah/OEJD Tehran/OIII
Brisbane	YBBZYX	Brisbane/YBBN Port Moresby/AYPM Wellington/NZKL
Nadi	NFFNYZYX	Nadi/NFFN
Singapore	WSSSYZYX	Jakarta/WIII Kuala Lumpur/WMKK Singapore/WSSS
Tokyo	RJTDZYX	Beijing/ZBBB Hong Kong/VHHH Incheon/RKSI Tokyo/RJTD

**10.2 Responsibilities:**

- 10.2.1 Collect OPMET bulletins from the ROBEX 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 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 ROBEX 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 ASIA/PAC 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

11.1 Inter-regional OPMET Gateways (IROG) are designated in the MID and ASIA/PAC Regions for the purpose of exchanging OPMET data between MID and ASIA/PAC and the other ICAO Regions, as shown in the table below.

ROBEX IROG	For exchange of OPMET data between Regions
Beirut	MID and EUR
Jeddah	MID and AFI MID and ASIA/PAC
Bangkok	ASIA/PAC and MID ASIA and AFI
Brisbane	ASIA/PAC and SAM PAC and AFI
Nadi	S.PAC and NAM
Singapore	ASIA/PAC and EUR
Tokyo	ASIA/PAC and NAM

11.2 IROGs arrange for relaying all ROBEX bulletins to a corresponding OPMET Gateway in the other ICAO regions concerned. In particular:

- *Bangkok IROG* relays all ASIA/PAC bulletins to Vienna IROG , which serves the MID Region, and should receive and store all required OPMET bulletins from MID Region;
- *Singapore IROG* relays all ASIA/PAC bulletins to IROG London at EUR Region, and should receive and store all required OPMET bulletins from EUR Region;
- *Tokyo IROG* relays all ASIA/PAC bulletins to Washington at NAM Region, and should receive and store all required OPMET bulletins from NAM Region.

11.3 The following principles are applied to IROGs:

- a) IROGs should have reliable and efficient AFTN connection to the regions, for which they have exchange responsibilities, with adequate capacity to handle the OPMET data flow between the regions;
- b) IROGs should be associated with AFTN relay centres capable of handling efficiently the volume of traffic anticipated;
- c) IROGs should be capable of handling all OPMET data types, as described in p.3.1.1.

- 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 addressing from the originator or ROBEX centre to recipients in the other ICAO Regions should be avoided, except when bilateral or other agreements require such direct exchanges.

## 12 MANAGEMENT OF OPMET EXCHANGE UNDER THE ROBEX SCHEME

### 12.1 OPMET bulletins update procedure

12.1.1 Information for changes of ROBEX bulletins should be disseminated to all ROBEX 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 ROBEX centre planning the change, should send a notification by e-mail or fax to the ICAO Office, Bangkok with copy to all ROBEX 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 Notification via AFTN should be done by means of METNO message, which is to be sent by the originating ROBEX centre to all other ROBEX centres and to the respective IROGs in the other ICAO regions two weeks prior to the implementation date. The format of the METNO message is given in **Appendix G**.

12.1.4 All requests by users for changes to ROBEX bulletins should be addressed to the ICAO Regional Office. The Regional Office should carry out the necessary coordination with the Sates and ROBEX 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 ROBEX 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:

<i>Quality Control</i>	<i>Data quality control applies to OPMET validation and correction during data processing and during preparation of messages.</i>
<i>OPMET Monitoring</i>	<i>Monitor and evaluate the performance indicators for the scheduled OPMET data.</i>

#### 12.2.2 Quality Control – general requirements

12.2.2.1 Quality control (QC) consists of examination of OPMET data at NOCs, ROBEX 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 ROBEX Centre, where the ROBEX 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 ROBEX 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, Bangkok 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 H**.
- 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 H**.
- 12.3.1.2 **Monitoring Reference**
- The monitoring shall involve the recording and analysis of data provided by the AFTN circuit. The three PIs should be monitored against the respective ROBEX Tables.
- 12.3.1.3 **Methodology**

Data is monitored with reference to the procedures defined in **Appendix H** the EUR OPMET Data Monitoring Procedures as produced by EANPG METG BMG (Bulletin Management Group).

### 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 Office, Bangkok.

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.

## 12.4 **ROBEX Focal Points**

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

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## APPENDIX A

## ROBEX COLLECTION AND DISSEMINATION OF METAR (SA) BULLETINS

Table A : METAR

## Explanation of Table

Col. 1: Name and ICAO location indicator of the ROBEX Centre compiling the bulletin.

Col. 2: Description of the METAR Bulletin

Col. 3: Official observation time of the bulletin

Col. 4: Distribution of the bulletin to other ROBEX centres and RODBs

*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*

Table A : ROBEX Collection and Dissemination of METAR (SA) Bulletins							
1		2			3	4	
ROBEX Centre		METAR Bulletin			Bul. Time	DISSEMINATION TO	
Name	CCCC	BUL No.	CCCC	Aerodrome		RODB/ROBEX C.	AFTN Address
<b>ASIA/PAC REGION</b>							
Bangkok	VTBB	SAAE31	VTBS	BANGKOK/Suvarnabhumi Intl Airport	HH + 00	BANGKOK	VTBBYPYX
			VTBD	BANGKOK/Don Mueang Intl Airport	HH + 30	BRISBANE	YBBBYPYX
			VTCC	CHIANG MAI/Chiang Mai Intl. Airport		SINGAPORE	WSZZPYM
			VTBU	RAYONG/U-Taphao Intl Airport		TOKYO	RJTDYPYX
			VTSS	SONGKHLA/Hat Yai Intl Airport		Kolkata	VECCYPYX
			VTSP	PHUKET/Phuket Intl Airport		Colombo	VCCCYPYX
			VLVT	VIENTIANE (Wattay)		Delhi	VIDPYPYX
			VYMD	MANDALAY INTERNATIONAL		Hong Kong	VHZZYPYX
			VYYY	YANGON INTERNATIONAL		Jakarta	WIZZMCMC
			VVTS	HO CHI MINH/Tan Son Nhat		Kuala Lumpur	WMZZYPYR
			VVNB	HA NOI/Noi Bai		Mumbai	VABBYPYX
			VVDN	DA NANG		Incheon	RKSIYPYX
VDPP	PHNOM PENH						
VDSR	SIEM REAP						
VVPB	HUE/Phu Bai						
		SAAE32	VLLB	LUANG PHABANG	HH + 00	BANGKOK	VTBBYPYX
			VLLN	LUANG NAMTHA		BRISBANE	YBBBYPYX
			VLPS	PAKSE		SINGAPORE	WSZZPYM
			VLSK	SAVANNAKHET		TOKYO	RJTDYPYX
				all SA in bulletin for 2300-1400 UT to be implemented 1 June 2011			
		SATH31	VTCH	MAE HONG SON*	HH + 00	BANGKOK	VTBBYPYX
			VTCL	LAMPANG***		BRISBANE	YBBBYPYX
			VTGN	NAN*		SINGAPORE	WSZZPYM
			VTCP	PHRAE*		TOKYO	RJTDYPYX
			VTCT	CHIANG RAI/Chiang Rai Intl Airport**			
			VTPH	PRACHUAP KHIRI KHAN/Hua Hin*			
			VTPO	SUKHOTHAI**			
			VTPP	PHITSANULOK**			
				*Available 0000-1100			
				**Available 2300-1400			
				***on request			
		SATH32	VTSB	SURAT TANI**	HH + 00	BANGKOK	VTBBYPYX
			VTSC	NARATHIWAT*		BRISBANE	YBBBYPYX
			VTSF	NAKHON SI THAMMARAT**		SINGAPORE	WSZZPYM
			VTSG	KRABI**		TOKYO	RJTDYPYX
			VTSH	SONGKHLA*			
			VTSM	SURAT THANI/Samui**			
			VTSR	RANONG***			
			VTST	TRANG*			

1		2			3	4	
ROBEX Centre		METAR Bulletin			Bul. Time	DISSEMINATION TO	
Name	CCCC	BUL No.	CCCC	Aerodrome		RODB/ROBEX C.	AFTN Address
				*Available 0000-1100 **Available 2300-1400 ***on request			
		<b>SATH33</b>	<i>VTBO</i> <i>VTUD</i> <i>VTUI</i> VTUK <i>VTUL</i> <i>VTUO</i> <i>VTUQ</i> VTUU <i>VTUV</i> <i>VTUW</i>	<i>TRAT/Khao Sming*</i> <i>UDON THANI**</i> <i>SAKON NAKHON/Ban Khai***</i> KHON KAEN** <i>LOEI***</i> <i>BURI RAM***</i> <i>NAKHON RATCHASIMA**</i> UBON RATCHATHANI <i>ROI ET***</i> <i>NAKHON PHANOM*</i>	HH + 00	<b>BANGKOK</b> BRISBANE SINGAPORE TOKYO	VTBBYPYX YBBBYPYX WSZZYPYM RJTDYPYX
				*Available 0000-1100 **Available 2300-1400 ***on request			
		<b>SATH41</b>	<i>VTPB</i> <i>VTPM</i> <i>VTSE</i> <i>VTSK</i> <i>VTUJ</i>	<i>PHETCHABUN</i> <i>TAK/Mae Sot</i> <i>CHUMPHON/Tab Gai</i> <i>PATTANI</i> <i>SURIN</i>	HH + 00	<b>BANGKOK</b> BRISBANE SINGAPORE TOKYO	VTBBYPYX YBBBYPYX WSZZYPYM RJTDYPYX
				<i>all aerodromes in bulletin avail on request</i>			
Beijing	ZBBB	<b>SACI31</b>	ZBAA	BEIJING/Capital	HH + 00	BANGKOK	VTBBYPYX
			<i>ZBSJ</i>	<i>SHIJIAZHUANG/Zhengding</i>	HH + 30	BRISBANE	YBBBYPYX
			ZBTJ	TIANJIN/Binhai		SINGAPORE	WSZZYPYM
ZBYN	TAIYUAN/Wusu		<b>TOKYO</b>	RJTDYPYX			
ZGGG	GUANGZHOU/Baiyun		Hong Kong	VHZZYPYX			
ZSHC	HANGZHOU/Xiaoshan		Jakarta	WIZZMZBB			
ZSPD	SHANGHAI/Pudong		Karachi	OPZZYPYX			
ZSSS	SHANGHAI/Hongqiao		Mumbai	VABBYPYX			
ZWSH	KASHI/Kashi		Incheon	RKSIYPYX			
ZWWW	URUMQI/Diwopu		Ulaanbaatar	ZMUBMYX			
ZYTL	DALIAN/Zhoushuizi						
ZYTX	SHENYANG/Taoxian						
		<b>SACI32</b>	ZGKL	GUILIN/Liangjiang	HH + 00	BANGKOK	VTBBYPYX
			ZGNN	NANNING/Wuxu		BRISBANE	YBBBYPYX
			<i>ZGOW</i>	<i>SHANTOU/Waisha</i>		SINGAPORE	WSZZYPYM
			ZGSZ	SHENZHEN/Baoan		<b>TOKYO</b>	RJTDYPYX
			ZLXY	XI'AN/Xianyang		Hong Kong	VHZZYPYX
			ZMUB	ULAANBAATAR		Jakarta	WIZZMZBB
			ZPPP	KUNMING/Wujiaba		Kuala Lumpur	WMZZYPYX
			ZSAM	XIAMEN/Gaoqi		Incheon	RKSIYPYX
			ZSFZ	FUZHOU/Changle		Wellington	NZZZYPYX
			<i>ZSNB</i>	<i>NINGBO/Lishe</i>			
			ZSQD	QINGDAO/Liuting			
			ZUUU	CHENGDU/Shuangliu			
		<b>SACI41</b>	ZBHH	HOHHOT/Baita	HH + 00	BANGKOK	VTBBYPYX

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ROBEX Centre		METAR Bulletin			Bul. Time	DISSEMINATION TO	
Name	CCCC	BUL No.	CCCC	Aerodrome		RODB/ROBEX C.	AFTN Address
			ZGHA <i>ZHCC</i> ZHHH <i>ZJHK</i> ZJSY ZLLL ZSNJ ZSOF ZUCK <i>ZYCC</i> ZYHB	CHANGSHA/Huanghua <i>ZHENGZHOU/Xinzheng</i> WUHAN/Tianhe <i>HAIKOU/Meilan</i> SANYA/Phoenix LANZHOU/Zhongchuan NANJING/Lukou HEFEI/Luogang CHONGQING/Jiangbei <i>CHANGCHUN/Longjia</i> HARBIN/Taiping		BRISBANE SINGAPORE <b>TOKYO</b> Hong Kong Jakarta Karachi Mumbai Incheon Ulaanbaatar Wellington	YBBBYPYX WSZZYPYM RJTDYPYX VHZZYPYX WIZZMZBB OPZZYPYX VABBYPYX RKSIIYPYX ZMUBMYX NZZZYPYX
Brisbane	YBBN	SAAU31	YSSY	SYDNEY/Sydney (Kingsford Smith) Intl	HH + 00 HH + 30	BANGKOK <b>BRISBANE</b> NADI SINGAPORE TOKYO Hong Kong Incheon Jakarta Port Moresby Wellington	VTBBYPYX
			YMML	MELBOURNE/Melbourne Intl			YBBBYPYX
YBBN	BRISBANE/Brisbane Intl		NFFNYPYX				
YPAD	ADELAIDE/Adelaide Intl		WSZZYPYM				
YPDN	DARWIN/Darwin Intl		RJTDYPYX				
YPPH	PERTH/Perth int		VHZZYPYX				
YBCS	CAIRNS/Cairns Intl		RKSIIYPYX				
YBAS	ALICE SPRINGS		WIZZMIMI				
<i>YPLM</i>	<i>LEARMONTH</i>		AYPYMYX				
YBTL	TOWNSVILLE/Townsville Intl		NZZZYPYX				
YPCC	COCOS (KEELING) ISLAND Intl						
YPXM	CHRISTMAS ISLAND						
YPTN	TINDAL						
<i>YPKU</i>	<i>KUNUNURRA</i>						
<i>YBCG</i>	<i>GOLD COAST</i>						
<i>YHID</i>	<i>HORN ISLAND</i>						
<i>YPJT</i>	<i>PERTH/Jandakot</i>						
<i>YSTW</i>	<i>TAMWORTH</i>						
<i>YCFS</i>	<i>COFFS HARBOUR</i>						
<i>YSCB</i>	<i>CANBERRA</i>						
		SAAU32	<i>YMAV</i>	<i>AVALON</i>	HH + 00 HH + 30	BANGKOK <b>BRISBANE</b> NADI SINGAPORE TOKYO Hong Kong Incheon Jakarta Port Moresby Wellington	VTBBYPYX
			YBRK	ROCKHAMPTON			YBBBYPYX
			<i>YPKG</i>	<i>KALGOORLIE-BOULDER</i>			NFFNYPYX
			YPPD	PORT HEDLAND			WSZZYPYM
			<i>YBRM</i>	<i>BROOME/Broome Intl</i>			RJTDYPYX
			YSNF	NORFOLK ISLAND Intl			VHZZYPYX
			<i>YSDU</i>	<i>DUBBO</i>			RKSIIYPYX
			<i>YSRI</i>	<i>RICHMOND, NSW</i>			WIZZMIMI
			<i>YWLM</i>	<i>WILLIAMTOWN</i>			AYPYMYX
			<i>YMLT</i>	<i>LAUNCESTON</i>			NZZZYPYX
			YMHB	HOBART			
			<i>YPEA</i>	<i>PEARCE</i>			
			<i>YCIN</i>	<i>CURTIN</i>			
			<i>YFRT</i>	<i>FORREST</i>			
			<i>YPGV</i>	<i>GOVE</i>			
		<i>YAMB</i>	<i>AMBERLEY</i>				
		<i>YBHM</i>	<i>HAMILTON ISLAND</i>				

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ROBEX Centre		METAR Bulletin			Bul. Time	DISSEMINATION TO	
Name	CCCC	BUL No.	CCCC	Aerodrome		RODB/ROBEX C.	AFTN Address
			YBMA YPWR YGEL	MOUNT ISA WOOMERA GERALDTON			
		SANG31	AYPY AYWK AYVN AYNZ AYMH AYGN AYMO AGGH  *NIL report	PORT MORESBY Intl WEWAK* VANIMO* NADZAB* MOUNT HAGEN* GURNEY* MOMOTE* HONIARA (HENDERSON)	HH+00	BANGKOK BRISBANE NADI SINGAPORE TOKYO Beijing Hong Kong Jakarta Port Moresby Wellington	VTBBYPYX YBBBYPYX NFFNYPYX WSZZPYM RJTDYPYX ZBBBYPYX VHZZYPYX WIZZMIMI AYPYMYX NZZZYPYX
Colombo	VCCC	SASB31	VCBI VRMM	BANDARANAIKE INTERNATIONAL AIRPORT COLOMBO MALE/Intl	HH + 10	BANGKOK BRISBANE SINGAPORE TOKYO Hong Kong Kuala Lumpur Mumbai	VTBBYPYX YBBBYPYX WSZZPYM RJTDYPYX VHZZYPYX WMZZYPYR VABBYPYX
Delhi	VIDP	SAIN32	VIDP VILK VIAR VIBN VIJP	DELHI/Indira Gandhi Intl LUCKNOW AMRITSAR VARANASI JAIPUR	HH + 00 HH + 30	BANGKOK BRISBANE SINGAPORE TOKYO Kolkata Hong Kong Karachi Mumbai	VTBBYPYX YBBBYPYX WSZZPYM RJTDYPYX VECCYPYX VHZZYPYX OPZZYPYX VABBYPYX
Hong Kong	VHHH	SAHK31	VHHH RCTP RCKH RCSS VMC RPLL RPVM RPM RPLB RPLI RPMZ	HONG KONG/International TAIBEI CITY/Taibei Intl Ap GAOXIONG TABELI/Songshan MACAU/Intl Airport MANILA/Ninoy Aquino Intl, Pasay City, Metro Manila LAPU-LAPU/Mactan, Cebu DAVAO/Francisco Bangoy Intl, Davao Del Sur* SUBIC BAY, Subic Bay Intl, Olongapo City, Zambales LAOAG, Laoag Intl, Ilocos Norte* ZAMBOANGA, Zamboanga Intl, Zamboanga Del Norte*	HH + 00 HH + 30**	BANGKOK BRISBANE SINGAPORE TOKYO Beijing Guangzhou Kuala Lumpur Incheon Wellington	VTBBYPYX YBBBYPYX WSZZPYM RJTDYPYX ZBBBYPYX ZGGGYPYX WMZZYPYR RKSIPYX NZZZYPYX

\*Available 2200 - 1000  
\*\*SAHK31 HH+30 bulletins contain VHHH, RCTP, RCKH, RCSS, VMMC except RCKH and

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ROBEX Centre		METAR Bulletin			Bul. Time	DISSEMINATION TO	
Name	CCCC	BUL No.	CCCC	Aerodrome		RODB/ROBEX C.	AFTN Address
		RCSS HH+30 METAR not available 1630 - 2130					
Incheon	RKSI	SAKO31	RKSI*	INCHEON	HH + 00 HH + 30*	BANGKOK	VTBBYPYX
			RKSS	GIMPO		BRISBANE	YBBBYPYX
			RKPC	JEJU		SINGAPORE	WSZZYPYM
			RKPK	GIMHAE		<b>TOKYO</b>	RJTDYPYX
			RKTU	CHEONGJU		Beijing	ZBBBYPYX
			RKNY	YANGYANG		Hong Kong	VHZZYPYX
			RKTN	DAEGU		Singapore	WSZZYPYM
			RKJB	MUAN		Tokyo	RJTDYPYX
					Wellington	NZZZYPYX	
					Mumbai	VABBYPYX	
Jakarta	WIII	SAID31	WAAA	UJUNG PANDANG/Hasanuddin	HH + 00 HH + 30	BANGKOK	VTBBYPYX
			WABB	BIAK/Frans Kaisiepo		BRISBANE	YBBBYPYX
			WIHH	JAKARTA/Halimperdana Kusuma		<b>SINGAPORE</b>	WSZZYPYM
			WIII	JAKARTA/Soekarno Hatta (COMM CENTER)		TOKYO	RJTDYPYX
			WIDD	BATAM/Hang Nadim		Hong Kong	VHZZYPYX
			WIMM	MEDAN/Polonia		Kuala Lumpur	WMZZYPYR
			WADD	BALI/Ngurah Rai		Wellington	NZZZYPYX
			WARR	SURABAYA/Juanda			
		SAID32	WAMM	MANADO/Sam Ratulangi	HH + 00 HH + 30		
			WIBB	PEKANBARU/Sultan Syarif Kasim II			
			WIDN	TANJUNG PINANG/Kijang			
			<i>WIPT</i>	<i>PANDANG</i>			
				<i>PARIAMAN/Minangkabau</i>			
			WIOO	PONTIANAK/Supadio			
			WIPP	PALEMBANG/Sultan Mahmud Badaruddin II			
		WAOO	BANJARMASIN/Syamsuddin Noor				
		WALL	BALIK PAPAN/Sepinggan	HH + 00 HH + 30			
		<i>WADA</i>	<i>MATARAM/Selaparang</i>				
		WABP	TIMIKA/Moses Kilangin				
		WAJJ	JAYAPURA/Sentani				
		WAKK	MERAUKE/Mopah				
		WAPP	AMBON/Pattimura				
<i>WARS</i>	<i>SEMARANG/A. Yani</i>						
<i>WICT</i>	<i>BANDAR LAMPUNG/Radin Inten</i>						
WATT	KUPANG/EI Tari						
WALR	TARAKAN/Juwata						
Kolkata	VECC	SAIN33	VECC	NETAJI SUBHASH CHANDRA BOSE INTERNATIONAL AIRPORT, KOLKATA	HH + 50	<b>BANGKOK</b>	VTBBYPYX
			VEPT	PATNA		BRISBANE	YBBBYPYX
			VGHS	HAZRAT SHAHJALAL INTERNATIONAL AIRPORT		SINGAPORE	WSZZYPYM

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ROBEX Centre		METAR Bulletin			Bul. Time	DISSEMINATION TO	
Name	CCCC	BUL No.	CCCC	Aerodrome		RODB/ROBEX C.	AFTN Address
			VGEG VNKT	M.A. HANNAN INTL. CHITTAGONG KATHMANDU		TOKYO Colombo Delhi Hong Kong Karachi Mumbai	RJTDYPYX VCCCPYX VIDPYPYX VHZZYPYX OPZZYPYX VABBYPYX
Karachi	OPKC	SAPK31	OPKC OPRN OPLA OPNH OPGD OPPS <i>OPSK</i>	KARACHI/Jinnah Int'l ISLAMABAD/Chaklala LAHORE/Allama Iqbal Int'l NAWABSHAH GWADAR PESHAWAR <i>SUKKUR (not in 7910)</i>	HH + 00 HH + 30	<b>BANGKOK</b> BRISBANE SINGAPORE TOKYO Abu Dhabi Bahrain Beijing Kolkata Delhi Hong Kong Mumbai Tehran	VTBBYPYX YBBBYPYX WSZZPYM RJTDYPYX OMZZYPYX OBZZYPYX ZBBBYPYX VECCYPYX VIDDYPYX VHZZYPYX VABBYPYX OIZZYPYX
Kuala Lumpur	WMKK	SAMS31	WBGG WBKK WBSB WMKK WMKP WSSS WSSL	KUCHING/Intl KOTA KINABALU/Intl BRUNEI/Intl SEPANG/KL International Airport PENANG/Intl SINGAPORE/Changi SELETAR	HH + 00 HH + 30	BANGKOK BRISBANE <b>SINGAPORE</b> TOKYO Colombo Hong Kong Jakarta Manila Mumbai Incheon Wellington	VTBBYPYX YBBBYPYX WSZZPYM RJTDYPYX VCCCPYX VHZZYPYX WIZZMBMB RPLLYPYX VABBYPYX RKSIPYX NZZZYPYX
			SAMS38	<i>WBGB WBGR WBGS WBKL WBKS WBKW WMKD WMKL WMKM</i>	<i>BINTULU MIRI SIBU LABUAN (RMAF) SANDAKAN TAWAU KUANTAN PULAU LANGKAWI/Intl MALACCA</i>	HH + 00	
Mumbai	VABB	SAIN31	VAAH VABB VANP^* <i>VOHY^**</i>  VOMM VOTR VOTV^* VQPR VOHS ^HH+40	AHMEDABAD MUMBAI/Chhatrapati Shivaji Intl. NAGPUR <i>HYDERABAD</i>  CHENNAI TIRUCHCHIRAPPALLI TRIVANDRUM PARO/Intl HYDERABAD	HH + 10 HH + 40	<b>BANGKOK</b> BRISBANE SINGAPORE  TOKYO Abu Dhabi Bahrain Colombo Delhi Hong Kong Karachi	VTBBYPYX YBBBYPYX WSZZPYM  RJTDYPYX OMZZYPYX OBZZYPYX VCCCPYX VIDPYPYX VHZZYPYX OPZZYPYX

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ROBEX Centre		METAR Bulletin			Bul. Time	DISSEMINATION TO		
Name	CCCC	BUL No.	CCCC	Aerodrome		RODB/ROBEX C.	AFTN Address	
			*available 0040 - 2340 **available 0040-1540			Kolkata Tehran	VECCYPYX OIZZYPYX	
Nadi	NFFN	SAPS31	NCRG	RAROTONGA Intl.	HH+00	BANGKOK	VTBBYPYX	
			NFFN	NADI/Intl			BRISBANE	YBBBYPYX
			NGFU	FUNAFUTI/Intl		NADI	NFFNYPYX	
			NGTA	TARAWA/Bonriki Intl		SINGAPORE	WSZZPYM	
			NIUE	NIUE Intl		TOKYO	RJTDYPYX	
			PLCH	CHRISTMAS ISLAND		Port Moresby	AYPYMYX	
			NFNA	NAUSORI/Intl		Wellington	NZZZYPYX	
			NSFA	FALEOLO/Intl				
			NSTU	PAGO PAGO Intl, Tutuila I.				
			NTAA	TAHITI FAAA				
			NWWW	NOUMEA LA TANTOUTA				
		SAPS32	NFTF	FUA'AMOTU Intl.				
			<i>NFTL</i>	<i>HA'API</i>				
			NFTV	VAVA'U				
			NLWW	WALLIS HIHIFO				
			NSAP	APIA				
			NSFA	FALEOLO/Intl				
			NVSS	SANTO/Pekoa				
			NVVV	PORT VILA/Bauerfield				
Tokyo	RJTD	SAJP31	RJAA	NARITA Intl	HH + 00	BANGKOK	VTBBYPYX	
			RJTT	TOKYO Intl			BRISBANE	YBBBYPYX
			ROAH	NAHA			NADI	NFFNYPYX
			RJOO	OSAKA Intl		SINGAPORE	WSZZPYM	
			RJBB	KANSAI Intl		TOKYO	RJTDYPYX	
			RJGG	CHUBU CENTRAIR Intl		Beijing	ZBBBYPYX	
		SAJP32	RJCC	SAPPORO/New Chitose		Guam	PGUMCOAX	
			RJFF	FUKUOKA		Hong Kong	VHZZYPYX	
			RJFK	KAGOSHIMA		Incheon	RKSIYPYX	
			RJCH	HAKODATE		London	EGZZMASI	
			RJFU	NAGASAKI		Wellington	NZZZYPYX	
			RJOA	HIROSHIMA				
			RJFT	KUMAMOTO				
			RJSN	NIIGATA				
			RJFO	OITA				
			RJOB	OKAYAMA				
			RJSS	SENDAI				
			RJOT	TAKAMATSU				
		SAJP38	<i>RJCK</i>	<i>KUSHIRO</i>	HH + 00	BANGKOK	VTBBYPYX	
			<i>RJCM</i>	<i>MEMANBETSU</i>			BRISBANE	YBBBYPYX
			<i>RJCB</i>	<i>OBIHIRO</i>		NADI	NFFNYPYX	
			<i>RJOC</i>	<i>IZUMO</i>		SINGAPORE	WSZZPYM	
			<i>RJOH</i>	<i>MIHO</i>		TOKYO	RJTDYPYX	
			<i>RJOK</i>	<i>KOCHI</i>		Beijing	ZBBBYPYX	
			<i>RJFM</i>	<i>MIYAZAKI</i>		Brasilia	SBBRYZYX	

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ROBEX Centre		METAR Bulletin			Bul. Time	DISSEMINATION TO	
Name	CCCC	BUL No.	CCCC	Aerodrome		RODB/ROBEX C.	AFTN Address
			ROIG RJNK RJNS RJNT RJSA RJSF RJOM RJEC RJSK RJAH RJFR	ISHIGAKI JIMA KANAZAWA/Komatsu SHIZUOKA TOYAMA AOMORI FUKUSHIMA MATSUYAMA ASAHIKAWA AKITA HYAKURI NEW KITAKYUSHU		Hong Kong Incheon London Rayong	VHZZYPYX RKSIYPYX EGZZMASI VTBUYMYX
Wellington	NZKL	SANZ31	NZWN NZAA NZCH	WELLINGTON Intl AUCKLAND Intl CHRISTCHURCH Intl	HH + 00	BANGKOK <b>BRISBANE</b> SINGAPORE TOKYO NADI Beijing Hong Kong Incheon Jakarta Port Moresby	VTBBYPYX YBBBYPYX WSZZYPYM RJTDYPYX NFFNYPYX ZBBBYPYX VHZZYPYX RKSIYPYX WIZZYPYX AYPYMYX
<b>MID REGION</b>							
Bahrain	OBBI	SABN31	OBBI OEDF OEDR OTBD OKBK	BAHRAIN/Bahrain Intl DAMMAM/King Fahd International DHAHRAN/King Abdul Aziz Air Base DOHA INTERNATIONAL KUWAIT/Intl Airport	HH +00	<b>BANGKOK</b> BRISBANE SINGAPORE TOKYO Abu Dhabi Baghdad Beirut Hong Kong Jeddah Karachi Mumbai Tehran Wellington	VTBBYPYX YBBBYPYX WSZZYPYM RJTDYPYX OMAMYPYX ORBSYPYX OLLLYPYX VHZZYPYX OEZZYPYX OPZZYPYX VABBYPYX OIZZYPYX NZZZYPYX
		SABN32	OMAA OMAD OMAL OMDB OMDW OMFJ OMRK OMSJ OOMS OOSA	ABU DHABI INTERNATIONAL ABU DHABI BATEEN AL AIN DUBAI INTERNATIONAL AL MAKTOUM/Intl FUJAIRAH INTERNATIONAL RAS AL KHAIMAH INTERNATIONAL SHARJAH INTERNATIONAL MUSCAT/Muscat Intl SALALAH	HH + 00	<b>BANGKOK</b> BRISBANE SINGAPORE TOKYO Abu Dhabi Baghdad Beirut Hong Kong Jeddah Karachi	VTBBYPYX YBBBYPYX WSZZYPYM RJTDYPYX OMAMYPYX ORBSYPYX OLLLYPYX VHZZYPYX OEZZYPYX OPZZYPYX

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ROBEX Centre		METAR Bulletin			Bul. Time	DISSEMINATION TO						
Name	CCCC	BUL No.	CCCC	Aerodrome		RODB/ROBEX C.	AFTN Address					
						Mumbai Tehran Wellington	VABBYPYX OIZZYPYX NZZZYPYX					
Beirut	OLBA	SAME31	OLBA	BEIRUT/Beirut Intl	HH + 00	<b>BANGKOK</b>	VTBBYPYX					
			OSDI	DAMASCUS/Intl			YBBBYPYX					
			OJAM	AMMAN/Marka			WSZZYPYM					
			OJAI	AMMAN/Qeen Alia			RJTDYPYX					
			OSAP	ALEPPO/Intl			OMZZYPYX					
			OSLK	BASSEL AL-ASSAD/Intl. Lattakia			ORBSYMYX					
OJAQ	AQABA/King Hussein International Airport	OBZZYPYX										
						Jeddah	OEJDYPYX					
Jeddah	OEJD	SADS31	OEDF	DAMMAM/King Fahd International	HH + 00	<b>BANGKOK</b>	VTBBYPYX					
			OEDR	DHAHRAN/King Abdul Aziz Air Base			YBBBYPYX					
			OEJN	JEDDAH/King AbdulAziz Intl			WSZZYPYM					
			OEMA	MADINAH/Prince Mohammad Bin AbdulAziz Intl			RJTDYPYX					
			OERK	RIYADH/King Khaled Intl			OMZZYPYX					
			OERY	RIYADH			ORBBYMYX					
			OYSN	SANAA/Intl			OBZZYPYX					
											Beirut	OLLLYPYX
						Hong Kong	VHZZYPYX					
Tehran	OIII	SAIR31	OIII	THEHRAN/Mehrabad Intl	HH + 00 HH + 30*	<b>BANGKOK</b>	VTBBYPYX					
			OIFM	ESFAHAN/Shahid Behesti Intl			YBBBYPYX					
			OISS	SHIRAZ/Shahid Dastghaib Intl			WSZZYPYM					
			OIZH	ZAHEDAN/Intl			RJTDYPYX					
			OIKB	BANDAR ABBAS/Intl			OMZZYPYX					
			OIMM	MASHHAD/Shahid Hashemi Nejad Intl			ORBSYMYX					
			OIAW	AHWAZ			OBZZYPYX					
			OIKK	KERMAN			OLLLYPYX					
			OITT	TABRIZ/Intl			VIDPYPYX					
											Karachi	OPZZYPYX
											Mumbai	VABBYPYX
						Hong Kong	VHZZYPYX					
		SAIR32	OIIE	TEHRAN/Imam Khomeini Intl	HH + 00	<b>BANGKOK</b>	VTBBYPYX					
			OITR	UROMIYEH			YBBBYPYX					
			OIAA	ABADAN			WSZZYPYM					
			OICC	KERMANSHAH/Shahid Ashrafi Esfahani			RJTDYPYX					
			OIGG	RASHT/Sardar-E-Jangal			OMZZYPYX					
			OIBK	KISH ISLAND/Kish			ORBSYMYX					
			OIYY	YAZD/Shahid Sadooghi			OBZZYPYX					
									Beirut	OLLLYPYX		
						Delhi	VIDPYPYX					
						Karachi	OPZZYPYX					

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ROBEX Centre		METAR Bulletin			Bul. Time	DISSEMINATION TO	
Name	CCCC	BUL No.	CCCC	Aerodrome		RODB/ROBEX C.	AFTN Address
						Mumbai	VABBYPYX
		<b>SAIR33</b>	OIBB OIBL OIBP OICK OICS OIHG OINZ OITL OIZC	BUSHEHR BANDAR LENGHEN PERSIAN GULF KHORAM ABAD SANANDAJ HAMADAN SARI/Dasht-E-Naz ARDABIL CHAH BAHAR/Konrak	HH + 00	<b>BANGKOK</b> BRISBANE SINGAPORE TOKYO Abu Dhabi Baghdad Bahrain Beirut Delhi Karachi Mumbai	VTBBYPYX YBBBYPYX WSZZPYM RJTDYPYX OMZZYPYX ORBSYMYX OBZZYPYX OLLLYPYX VIDPYPYX OPZZYPYX VABBYPYX
		<b>SAIR34</b>	OIAG OIAM OICI OIKQ OINN OINR OISL OISY OITZ	AGHAJARI BANDAR MAHSHAHR/Mahshahr ILAM MINAB NOSHAHR RAMSAR LAR YASOUJ ZANJAN	HH + 00	<b>BANGKOK</b> BRISBANE SINGAPORE TOKYO Abu Dhabi Baghdad Bahrain Beirut Delhi Karachi Mumbai	VTBBYPYX YBBBYPYX WSZZPYM RJTDYPYX OMZZYPYX ORBSYMYX OBZZYPYX OLLLYPYX VIDPYPYX OPZZYPYX VABBYPYX
		<b>SAIR35</b>	OIAD OIBJ OIBS OIHR OIKM OIKR OING OIZB OIZI	DEZFUL JAM SIRRI ISLAND/Sirri ARAK BAM RAFSSANJAN GORGAN ZABOL IRAN SHAHR	HH + 00	<b>BANGKOK</b> BRISBANE SINGAPORE TOKYO Abu Dhabi Baghdad Bahrain Beirut Delhi Karachi Mumbai	VTBBYPYX YBBBYPYX WSZZPYM RJTDYPYX OMZZYPYX ORBSYMYX OBZZYPYX OLLLYPYX VIDPYPYX OPZZYPYX VABBYPYX
		<b>SAIR36</b>	OIBA OIBV OIFS OIIP OIMB OIMN OIMS OIMT OIZJ	ABUMUSA ISLAND/Abumusa LAVAN ISLAND/Lavan SHAHRE KORD KARAJ/Payam BIRJAND BOJNORD SABZEVAR TABAS JASK	HH + 00	<b>BANGKOK</b> BRISBANE SINGAPORE TOKYO Abu Dhabi Baghdad Bahrain Beirut Delhi Karachi Mumbai	VTBBYPYX YBBBYPYX WSZZPYM RJTDYPYX OMZZYPYX ORBSYMYX OBZZYPYX OLLLYPYX VIDPYPYX OPZZYPYX VABBYPYX

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ROBEX Centre		METAR Bulletin			Bul. Time	DISSEMINATION TO	
Name	CCCC	BUL No.	CCCC	Aerodrome		RODB/ROBEX C.	AFTN Address
		<b>SAIR37</b>	OIBQ OIIK OIMC OIMD OIMQ OITK OITM	KHARK ISLAND/Khark GHAZVIN SARAKHS GOONABAD KASHMAR KHOY MARAGHEH/Sahand	HH + 00	<b>BANGKOK</b> BRISBANE SINGAPORE TOKYO Abu Dhabi Baghdad Bahrain Beirut Delhi Karachi Mumbai	VTBBYPYX YBBBYPYX WSZZYPYM RJTDYPYX OMZZYPYX ORBSYMYX OBZZYPYX OLLLYPYX VIDPYPYX OPZZYPYX VABBYPYX
<b>Cairo</b>	<b>HECA</b>	SAEG31	HEBL HEAX HEMM HEPS HELX HESN HEGN HESH HEBA HEMA HETB HESC	ABU SIMBEL ALEXANDRIA/Intl MERSA MATRUH PORT SAID/Intl LUXOR/Intl SHARM EL SHEIKH/Intl HURGHADA/Intl SHARM EL SHEIKH/Intl BORG EL ARAB/Intl MARAS /ALAM/Intl TABA/Intl ST CATHERINE/Intl	HH+00	<b>BANGKOK</b> BRISBANE SINGAPORE TOKYO	VTBBYPYX YBBBYPYX WSZZYPYM RJTDYPYX

**APPENDIX B****ROBEX COLLECTION AND DISSEMINATION OF LONG TAF (FT) BULLETINS****Table B : FT TAF****Explanation of the Table**

- Col. 1: Name and ICAO location indicator of the ROBEX Centre compiling the bulletin
- Col. 2: Description of the TAF Bulletin
- Col. 3: Distribution of the bulletin to other ROBEX Centres and RODBs

Notes:

- 1 The RODB responsible for storing the bulletin is in bold
- 2 In order to comply with the Basic ANP, the TAF filing time shall be 1 hour before the start of the period of validity.
- 3 Some TAF do not meet specified 24- and 30-hour IATA requirements and are indicated with the required TAF in parenthesis in column 2 TAF validity  
  
IATA TAF validity requirements presented to the CNS/MET SG/12 meeting has been accounted for in this column, but the following locations in the IATA list are not contained in the ASIA/PAC ROBEX HB Table B: PADK, PASY, PACD, PAKN, PGUM, UEEE, UHHH, UHMM, UHPP, UHSS, WALL, WAMM
- 4 Non-AOP aerodromes indicated in *italics*

**Table B : ROBEX Collection and Dissemination of Long TAF (FT) Bulletins**

1		2						3				
ROBEX Centre		TAF Bulletin						Dissemination				
Name	CCCC	Bul No.	CCCC	Aerodrome	Filing time	Start of validity	TAF validity	RODB/ROBEX Centre	AFTN address			
Bangkok	VTBB	FTAE31	VTBS	BANGKOK/Suvarnabhumi Intl Airport	0500	0600	30	BANGKOK	VTBBYPYX			
			VTBD	BANGKOK/Don Mueang Intl Airport	1100	1200	30		BRISBANE	YBBBYPYX		
			VTBU	RAYONG/U-Tapao Intl	1700	1800	24		SINGAPORE	WSZZYPYX		
			VTCC	CHIANG MAI/Chiang Mai Intl. Airport	2300	0000	30		TOKYO	RJTDYPYX		
			VTSS	SONGKHLA/Hat Yai Intl			24		Abu Dhabi	OMZZYPYX		
			VTSP	PHUKET/Phuket Intl			30		Bahrain	OBZZYPYX		
			VTCT	CHIANG RAI/Chiang Rai Intl Airport			30		Beijing	ZBBBYPYX		
			VTSG	KRABI			24		Beirut	OLLLYPYX		
			VTUU	UBON RATCHATHANI			24		Hong Kong	VHZZYPYX		
									Jeddah	OEJDYPYX		
									Karachi	OPZZYPYX		
									Kuala Lumpur	WMZZYPYR		
									Mumbai	VABBYPYX		
									Incheon	RKSIYPYX		
									Tehran	OIIIYPYX		
									Wellington	NZZZYPYA		
				FTAE32	VDPP	PHNOM PENH	0500	0600	18 (24)	BANGKOK	VTBBYPYX	
					VDSR	SIEM REAP	1100	1200	18 (24)		BRISBANE	YBBBYPYX
					VVTS	HO CHI MINH/Tan Son Nhat	1700	1800	30		SINGAPORE	WSZZYPYX
					VVNB	HA NOI/Noi bai	2300	0000	24		TOKYO	RJTDYPYX
					VVDN	DA NANG			24		Bahrain	OBZZYPYX
					VYYY	YANGON INTERNATIONAL			24		Beijing	ZBBBYPYX
					VYMD	MANDALAY INTERNATIONAL *			24		Beirut	OLLLYPYX
					VGHS	HAZRAT SHAHJALAL INTERNATIONAL AIRPORT			24 (30)		Hong Kong	VHZZYPYX
					VVPB	HUE/Phu Bai *Issued 0500/1100			24		Jeddah	OEJDYPYX
									Karachi	OPZZYPYX		
									Kuala Lumpur	WMZZYPYR		
							Mumbai	VABBYPYX				
							Incheon	RKSIYPYX				
							Tehran	OIIIYPYX				
							Wellington	NZZZYPYA				
		FTAE33	VLLB	LUANG PRABANG	0330	0500	18	BANGKOK	VTBBYPYX			
			VLLN	LUANG NAMTHA	0930	1100	18		BRISBANE	YBBBYPYX		
			VLPS	PAKSE	2200	2300	18		SINGAPORE	WSZZYPYX		
			VLSK	SAVANNAKHET			18		TOKYO	RJTDYPYX		
			VLVT	VIENTIANE (Wattay)			18 (24)		Bahrain	OBZZYPYX		
							Beijing	ZBBBYPYX				
							Beirut	OLLLYPYX				
							Hong Kong	VHZZYPYX				
							Jeddah	OEJDYPYX				
							Karachi	OPZZYPYX				
							Kuala Lumpur	WMZZYPYR				
							Mumbai	VABBYPYX				
							Incheon	RKSIYPYX				
							Tehran	OIIIYPYX				
							Wellington	NZZZYPYA				

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ROBEX Centre		TAF Bulletin						Dissemination		
Name	CCCC	Bul No.	CCCC	Aerodrome	Filing time	Start of validity	TAF validity	RODB/ROBEX Centre	AFTN address	
		FTTH31	VTCL	LAMPANG	0500	0600	24	BANGKOK	VTBBYPYX	
			VTCN	NAN	1100	1200	24		BRISBANE	YBBBYPYX
			VTCP	PHRAE	<i>Note: issued twice per day</i>		24		SINGAPORE	WSZZYPYX
			VTCH	MAE HONG SON			24		TOKYO	RJTDYPYX
			VTPM	TAK/MAE SOT			24			
			VTPP	PHITSANULOK			24			
			VTPT	TAK			24			
			VTPO	SUKHOTHAI			24			
			VTPB	PHETCHABUN			24			
		FTTH32	VTSB	SURAT THANI	0500	0600	24	BANGKOK	VTBBYPYX	
			VTSM	SURAT THANI/Samui	1100	1200	24		BRISBANE	YBBBYPYX
			VTSC	NARATHIWAT	<i>Note: issued twice per day</i>		24		SINGAPORE	WSZZYPYX
			VTSK	PATTANI			24		TOKYO	RJTDYPYX
			VTST	TRANG			24			
			VTSR	RANONG			24			
			VTSF	NAKHON SI THAMMARAT			24			
			VTSH	SONGKHLA			24			
			VTSE	CHUMPHON/Tab Gai			24			
		FTTH33	VTUD	UDON THANI	0500	0600	24	BANGKOK	VTBBYPYX	
			VTUI	SAKON NAKHON/Ban Khai	1100	1200	24		BRISBANE	YBBBYPYX
			VTUK	KHON KAEN	<i>Note: issued twice per day</i>		24		SINGAPORE	WSZZYPYX
			VTUL	LOEI			24		TOKYO	RJTDYPYX
			VTUO	BURI RAM			24			
			VTUW	NAKHON PHANOM			24			
			VTUQ	NAKHON RATCHASIMA			24			
			VTUV	ROI ET			24			
			VTUJ	SURIN			24			

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ROBEX Centre		TAF Bulletin						Dissemination			
Name	CCCC	Bul No.	CCCC	Aerodrome	Filing time	Start of validity	TAF validity	RODB/ROBEX Centre	AFTN address		
Beijing	ZBBB	FTCI31	ZBAA	BEIJING/Capital	0500	0600	24 (30)*	BANGKOK	VTBBYPYX		
			ZBSJ	SHIJIAZHUANG/Zhengding	1100	1200	24	BRISBANE	YBBBYPYX		
			ZBTJ	TIANJIN/Binhai	1700	1800	24 (30)	SINGAPORE	WSZZYPYX		
			ZBYN	TAIYUAN/Wusu	2300	0000	24	<b>TOKYO</b>	RJTDYPYX		
			ZGGG	GUANGZHOU/Baiyun			24 (30)*	Hong Kong	VHZZYPYX		
			ZSHC	HANGZHOU/Xiaoshan			24	Karachi	OPZZYPYX		
			ZSPD	SHANGHAI/Pu Dong			24 (30)*	Mumbai	VABBYPYX		
			ZSSS	SHANGHAI/Hongqiao			24*	Incheon	RKSIYPYX		
			ZWSH	KASHI/Kashi			24 (30)	Ulan Bator	XMUBYMYX		
			ZWWW	URUMQI/Diwopu			24 (30)	Wellington	NZZZYPYA		
		ZYTL	DALIAN/Zhoushuizi			24					
		ZYTX	SHENYANG/Taoxian			24					
		*30 hour TAF to be implemented 1 July 2011									
		FTCI32	ZGKL	GUILIN/Lianjiang	0500	0600	24	BANGKOK	VTBBYPYX		
			ZGNN	NANNING/Wuxu	1100	1200	24	BRISBANE	YBBBYPYX		
			ZGOW	SHANTOU/Waisha	1700	1800	24	SINGAPORE	WSZZYPYX		
			ZGSZ	SHENZHEN/Baoan	2300	0000	24 (30)	<b>TOKYO</b>	RJTDYPYX		
			ZLXY	XI'AN/Xianyang			24	Hong Kong	VHZZYPYX		
			ZMUB	ULAANBAATAR			30	Jakarta	WIZZYPYX		
			ZPPP	KUNMING/Wujiaba			24 (30)	Karachi	OPZZYPYX		
			ZSAM	XIAMEN/Gaoqi			24	Kuala Lumpur	WMZZYPYR		
			ZSFZ	FUZHOU/Changle			24	Mumbai	VABBYPYX		
			ZSNB	NINGBO/Lishe			24	Wellington	NZZZYPYA		
			ZSQD	QINGDAO/Liuting			24				
			ZUUU	CHENGDU/Shuangliu			24				
			FTCI41	ZBHH	HUHHOT/Baita	0500	0600	24	BANGKOK	VTBBYPYX	
		ZGHA		CHANGSHA/Huanghua	1100	1200	24	BRISBANE	YBBBYPYX		
		ZHCC		ZHENGZHOU/Xinzheng			24	SINGAPORE	WSZZYPYX		
		ZHHH		WUHAN/Tianhe	1700	1800	24	<b>TOKYO</b>	RJTDYPYX		
		ZJHK		HAIKOU/Meilan	2300	0000	24 (30)	Hong Kong	VHZZYPYX		
		ZJSY		SANYA/Phoenix			24	Jakarta	WIZZYPYX		
		ZLLL		LANZHOU/Zhongchuan			24	Karachi	OPZZYPYX		
		ZSNJ		NANJING/Lukou			24	Mumbai	VABBYPYX		
ZSOF	HEFEI/Luogang				24	Incheon	RKSIYPYX				
ZUCK	CHONGQING/Jiangbei				24	Ulan Bator	ZMUBYMYX				
ZYCC	CHANGCHUN/Longjia			24	Wellington	NZZZYPYX					
ZYHB	HARBIN/Taiping			24							
Brisbane	YBBN	FTAU31	YPAD	ADELAIDE/Adelaide Intl	0500	0600	30	BANGKOK	VTBBYPYX		
			YBBN	BRISBANE/Brisbane Intl	1100	1200	30	<b>BRISBANE</b>	YBBBYPYX		
			YPDN	DARWIN/Darwin Intl	1700	1800	30	NADI	NFZZRFXX		
			YMML	MELBOURNE/Melbourne Intl	2300	0000	30	SINGAPORE	WSZZYPYX		
			YPPH	PERTH/Perth Intl			30	<b>TOKYO</b>	RJTDYPYX		
			YSSY	SYDNEY/Sydney (Kingsford Smith) Intl			30	Beijing	ZBBBYPYX		
								Hong Kong	VHZZYPYX		
								Jakarta	WIZZYPYX		
					Manila	RPLLYPYX					
					Mumbai	VABBYPYX					
					Port Moresby	AYPMYMYX					
					Wellington	NZZZYPYX					

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ROBEX Centre		TAF Bulletin						Dissemination	
Name	CCCC	Bul No.	CCCC	Aerodrome	Filing time	Start of validity	TAF validity	RODB/ROBEX Centre	AFTN address
		FTAU32	YBAS	ALICE SPRINGS	0500	0600	24	BANGKOK	VTBBYPYX
			YMAV	AVALON	1100	1200	24	BRISBANE	YBBBYPYX
			YBCS	CAIRNS/Cairns Intl	1700	1800	24	NADI	NFZZRFXX
			YSCB	CANBERRA	2300	0000	24	SINGAPORE	WSZZYPYX
			YPKG	KALGOORLIE-BOULDER			24	TOKYO	RJTDYPYX
			YPLM	LEARMONTH			24	Beijing	ZBBBYPYX
			YPTN	TINDAL			24	Hong Kong	VHZZYPYX
			YBTL	TOWNSVILLE/Townsville Intl			24	Jakarta	WZZYPYX
			YBCG	GOLD COAST			24	Manila	RPLLYPYX
		YGEL	GERALDTON			24	Mumbai	VABBYPYX	
							Port Moresby	AYPMYMYX	
							Wellington	NZZZYPYX	
		FTAU33	YBRM	BROOME/Broome Intl	0500	0600	18	BANGKOK	VTBBYPYX
			YPXM	CHRISTMAS ISLAND	1100	1200	18 (24)	BRISBANE	YBBBYPYX
			YPCC	COCOS (KEELING) ISLAND Intl	1700	1800	18 (24)	NADI	NFZZRFXX
			YSDU	DUBBO	2300	0000	18	SINGAPORE	WSZZYPYX
			YPWR	WOOMERA			18	TOKYO	RJTDYPYX
			YMHB	HOBART			18 (24)	Beijing	ZBBBYPYX
			YMLT	LAUNCESTON			18	Hong Kong	VHZZYPYX
			YSNF	NORFOLK ISLAND Intl			18 (24)	Jakarta	WZZYPYX
			YPEA	PEARCE			18	Manila	RPLLYPYX
			YPPD	PORT HEDLAND			18 (24)	Mumbai	VABBYPYX
			YSRI	RICHMOND, NSW			18	Port Moresby	AYPMYMYX
			YBRK	ROCKHAMPTON			18 (24)	Wellington	NZZZYPYX
			YWLM	WILLIAMTOWN			18		
			YPJT	PERTH/Jandakot			18		
			YHID	HORN ISLAND			18		
			YSTW	TAMWORTH			18		
		YCFS	COFFS HARBOUR			18			
		FTAU34	YAMB	AMBERLEY	0500	0600	12	BANGKOK	VTBBYPYX
			YBHM	HAMILTON ISLAND	1100	1200	12	BRISBANE	YBBBYPYX
			YBMA	MOUNT ISA	1700	1800	12	NADI	NFZZRFXX
			YPKU	KUNUNURRA*	2300	0000	12	SINGAPORE	WSZZYPYX
			YPGV	GOVE			12	TOKYO	RJTDYPYX
								Beijing	ZBBBYPYX
							Hong Kong	VHZZYPYX	
							Jakarta	WZZYPYX	
							Manila	RPLLYPYX	
							Mumbai	VABBYPYX	
							Port Moresby	AYPMYMYX	
							Wellington	NZZZYPYX	
		FTAU35	YCIN	CURTIN	0100	0200	18	BANGKOK	VTBBYPYX
			YFRT	FORREST	0700	0800	18	BRISBANE	YBBBYPYX
					1300	1400		NADI	NFZZRFXX
					1900	2000		SINGAPORE	WSZZYPYX
								TOKYO	RJTDYPYX
								Beijing	ZBBBYPYX
								Hong Kong	VHZZYPYX
								Jakarta	WZZYPYX
								Manila	RPLLYPYX
							Mumbai	VABBYPYX	
							Port Moresby	AYPMYMYX	
							Wellington	NZZZYPYX	

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ROBEX Centre		TAF Bulletin						Dissemination		
Name	CCCC	Bul No.	CCCC	Aerodrome	Filing time	Start of validity	TAF validity	RODB/ROBEX Centre	AFTN address	
		FTTM31	WPDL	DILI/Presidente Nicolau Lobato Intl	0100 0700 1300 1900	0200 0800 1400 2000	12	BANGKOK	VTBBYPYX	
								BRISBANE	YBBBYPYX	
								NADI	NFZZRFXX	
								SINGAPORE	WSZZYPYX	
								TOKYO	RJTDYPYX	
								Beijing	ZBBBYPYX	
								Hong Kong	VHZZYPYX	
								Jakarta	WZZYPYX	
								Manila	RPLLYPYX	
								Mumbai	VABBYPYX	
		Port Moresby	AYPMYMYX							
		Wellington	NZZZYPYX							
		FTNG31	AYPY ANYN* AGGH	PORT MORESBY Intl	0400	0600	24	BANGKOK	VTBBYPYX	
				NAURU I.	1000	1200	24	BRISBANE	YBBBYPYX	
				HONIARA (HENDERSON)	1600	1800	24	NADI	NFZZRFXX	
					2200	0000		SINGAPORE	WSZZYPYX	
								TOKYO	RJTDYPYX	
								Beijing	ZBBBYPYX	
								Hong Kong	VHZZYPYX	
								Jakarta	WZZYPYX	
								Manila	RPLLYPYX	
								Mumbai	VABBYPYX	
						Port Moresby	AYPMYMYX			
						Wellington	NZZZYPYX			
Hong Kong	VHHH	FTHK31	VHHH	HONG KONG/International	0500	0600	30	BANGKOK	VTBBYPYX	
				RCTP	TAIBEI CITY/Taibei Intl Ap	1100	1200	30	BRISBANE	YBBBYPYX
				RCKH	GAOXIONG	1700	1800	30	SINGAPORE	WSZZYPYX
				RCSS	TAIBEI/Songshan	2300	0000	24	TOKYO	RJTDYPYX
				VMMC	MACAOU/Intl Airport			30	Abu Dhabi	OMZZYPYX
				RPLL	MANILA/Ninoy Aquino Intl, Pasay City, Metro Manila			30	Bahrain	OBZZYPYX
				RPVM	LAPU-LAPU/Mactan, Cebu			30	Beijing	ZBBYPYX
				RPMD	DAVAO/Francisco Bangoy Intl, Davao Del Sur			24	Beirut	OLLLYPYX
				RPLB	SUBIC BAY, Subic Bay Intl, Olongapo City, Zambales			24	Karachi	OPZZYPYX
				RPMZ	ZAMBOANGA, Zamboanga Intl, Zamboanga Del Norte			24	Mumbai	VABBYPYX
				RPLI	LAOAG, Laoag Intl, Ilocos Norte			24	Incheon	RKSIYPYX
									Tehran	OIIIYPYX
									Wellington	NZZZYPYA
Incheon	RKSI	FTKO31	RKSI	INCHEON Intl	0500	0600	30	BANGKOK	VTBBYPYX	
				RKSS	GIMPO Intl	1100	1200	30	BRISBANE	YBBBYPYX
				RKPC	JEJU Intl	1700	1800	30	SINGAPORE	WSZZYPYX
				RKPK	GIMHAE Intl	2300	0000	24	TOKYO	RJTDYPYX
				RKTU	CHEONGJU Intl			24	Hong Kong	VHZZYPYX
				RKNY	YANGYANG Intl			30	Karachi	OPZZYPYX
				RKTN	DAEGU INTL			24	Wellington	NZZZYPYX
				RKJB	MUAN Intl			30		

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ROBEX Centre		TAF Bulletin						Dissemination			
Name	CCCC	Bul No.	CCCC	Aerodrome	Filing time	Start of validity	TAF validity	RODB/ROBEX Centre	AFTN address		
Karachi	OPKC	FTPK31	OPKC	KARACHI/Jinnah Intl	0400	0600	30	BANGKOK	VTBBYPYX		
			OPRN	ISLAMABAD/Chaklala	1000	1200	30		BRISBANE	YBBBYPYX	
			OPLA	LAHORE/Allama Iqbal Int'l	1600	1800	30		SINGAPORE	WSZZYPYX	
			OPNH	NAWABSHAH	2200	0000	30		TOKYO	RJTDYPYX	
			OPPS	PESHAWAR			30		Abu Dhabi	OMZZYPYX	
			OPGD	GWADAR			24		Bahrain	OBZZYPYX	
			OPSK	SUKKAR			24		Beijing	ZBBYPYX	
									Beirut	OLLLYPYX	
					Hong Kong	VHZZYPYX					
					Jeddah	OEJDYPYX					
					Karachi	OPZZYPYX					
					Tehran	OIIYPYX					
Mumbai	VABB	FTIN31	VAAH	AHMEDABAD	0300	0600	30	BANGKOK	VTBBYPYX		
			VABB	MUMBAI/Chhatrapati Shivaji Intl.	0900	1200	30		BRISBANE	YBBBYPYX	
			VANP	NAGPUR	1500	1800	30		SINGAPORE	WSZZYPYX	
			VECC	NETAJI SUBHASH CHANDRA BOSE	2100	0000	30		TOKYO	RJTDYPYX	
			VEPT	PATNA			30		Abu Dhabi	OMZZYPYX	
			VIAR	AMRITSAR			30		Bahrain	OBZZYPYX	
			VIBN	VARANASI			30		Beijing	ZBBYPYX	
			VIDP	DELHI/Indira Gandhi Intl			30		Beirut	OLLLYPYX	
			VIJP	JAIPUR			30		Hong Kong	VHZZYPYX	
			VILK	LUCKNOW			30		Jeddah	OEJDYPYX	
							Karachi	OPZZYPYX			
							Tehran	OIIYPYX			
				FTIN32	VCBI	BANDARANAIKE INTERNATIONAL AIRPORT	0400	0600	24 (30)		
					VNKT	KATHMANDU	1000	1200	24		
					VOCI	COCHIN INTERNATIONAL AIRPORT	1600	1800	30		
					VOCL	CALICUT	2200	0000	30		
					VOHY	HYDERABAD			30		
					VOMM	CHENNAI			30		
					VOTR	TIRUCHCHIRAPPALLI			30		
					VOTV	TRIVANDRUM			30		
		VRMM	MALE INTERNATIONAL AIRPORT				30				
		VRMG	GAN INTERNATIONAL AIRPORT				30				
		VOHS	HYDERABAD INTERNATIONAL AIRPORT			30					
Nadi	NFFN	FTPS31	NCRG	RAROTONGA INTL.	0400	0600	24	BANGKOK	VTBBYPYX		
			NFFN	NADI/Intl	1000	1200	24		BRISBANE	YBBBYPYX	
			NFTF	FUA'AMOTU INTL.	1600	1800	24		SINGAPORE	WSZZYPYX	
			NFTV	VAVA'U	2200	0000	24		NADI	NFZZRFX	
			NGTA	TARAWA/Bonriki Intl			24		TOKYO	RJTDYPYX	
			NIUE	NIUE Intl			24		Hong Kong	VHZZYPYX	
			NSAP	APIA			24		Wellington	NZZZYPYA	
			NVSS	SANTO/Pekoa			24				
			NVVV	PORT VILA/Bauerfield			24				
			PLCH	CHRISTMAS ISLAND			24				
			NSTU	PAGO PAGO Intl, Tutuila I.			24				
			NFNA	NAUSOR/Intl			24				
			NTAA	TAHITI FAAA			24				
			NWWW	NOUMEA LA TANTOUTA			24				
			NSFA	FALEOLO/Intl			24				
			NLWW	WALLIS HIHIFO			24				

1		2						3			
ROBEX Centre		TAF Bulletin						Dissemination			
Name	CCCC	Bul No.	CCCC	Aerodrome	Filing time	Start of validity	TAF validity	RODB/ROBEX Centre	AFTN address		
Singapore	WSSS	FTSR31	WSSS	SINGAPORE/Changi	0500	0600	30	BANGKOK	VTBBYPYX		
			WSAP	PAYA LEBAR (RSAF)	1100	1200	30	BRISBANE	YBBBYPYX		
			WSSL	SELETAR	1700	1800	30	<b>SINGAPORE</b>	WSZZYPYX		
			WAAA	UJUNG PANDANG/Hasanuddin (Comm Center)	2300	0000	30	TOKYO	RJTDYPYX		
			WABB	BIAK/Frans Kaisiepo			30	NADI	NFZZRFXX		
			WADD	BALI/Ngurah Rai			30	Abu Dhabi	OMZZYPYX		
			WARR	SURABAYA/Juanda			24	Bahrain	OBZZYPYX		
			WIHH	JAKARTA/Halimperdana Kusuma			24	Beijing	ZBBBYPYX		
			WIII	JAKARTA/Soekarno Hatta (COMM CENTER)			30	Beirut	OLLLYPYX		
			WIMM	MEDAN/Polonia			24	Colombo	VCCCYPYX		
							Hong Kong	VHZZYPYX			
							Karachi	OPZZYPYX			
							Manila	RPLLYPYX			
							Mumbai	VABBYPYX			
							Incheon	RKSIYPYX			
							Tehran	OIIYPYX			
							Wellington	NZZZYPYA			
				FTSR32	WMKJ	JOHOR BAHRU/Sultan Ismail	0500	0600	24	BANGKOK	VTBBYPYX
					WMKK	SEPANG/KL International Airport	1100	1200	30	BRISBANE	YBBBYPYX
					WMKL	PULAU LANGKAWI/Intl	1700	1800	24	<b>SINGAPORE</b>	WSZZYPYX
					WMKM	MALACCA	2300	0000	24	TOKYO	RJTDYPYX
					WMKP	PENANG/Intl			24	Beirut	OLLLYPYX
					WMSA	SUBANG/Sultan Abdul Aziz Shah			24 (30)	Hong Kong	VHZZYPYX
				FTSR33	WBSB	BRUNEI/Intl	0500	0600	30	Mumbai	VABBYPYX
					WBGB	BINTULU	1100	1200	24	Wellington	NZZZYPYX
					WBGG	KUCHING/Intl	1700	1800	24		
					WBGR	MIRI	2300	0000	24		
					WBGS	SIBU			24		
					WBKK	KOTA KINABALU/Intl			24		
					WBKL	LABUAN (RMAF)			24		
					WBKS	SANDAKAN			24		
					WBKW	TAWAU			24		

1		2						3			
ROBEX Centre		TAF Bulletin						Dissemination			
Name	CCCC	Bul No.	CCCC	Aerodrome	Filing time	Start of validity	TAF validity	RODB/ROBEX Centre	AFTN address		
Tokyo	RJTD	FTJP31	RJAA	NARITA Intl	0200	0300	27 (30)	BANGKOK	VTBBYPYX		
			RJBB	KANSAI Intl	0800	0900	27 (30)	BRISBANE	YBBBYPYX		
			RJTT	TOKYO Intl	1400	1500	27	NADI	NFZZRFXX		
			RJOO	OSAKA Intl	2000	2100	27	SINGAPORE	WSZZYPYX		
			ROAH	NAHA			27 (30)	<b>TOKYO</b>	RJTDYPYX		
			RJCH	HAKODATE			27 (30)	Beijing	ZBBBYPYX		
			RJSS	SENDAI			27 (30)	Beirut	OLLLYPYX		
								Brasilia	SBBRYZYX		
							Colombo	VCBIYMYX			
							Guam	PGUMCOAX			
							Hong Kong	VHZZYPYX			
							Karachi	OPZZYPYX			
							London	EGZZMASI			
							Mumbai	VABBYPYX			
							Noumea	NWCCYMYX			
							Rome	LIIBYMYX			
							Saipan	PGSNYMYX			
							Incheon	RKSIYPYX			
							Washington	KWBCYMYX			
							Wellington	NZZZYPYA			
				FTJP32	RJFF	FUKUOKA/Fukuoka	0200	0300	27	BANGKOK	VTBBYPYX
					RJGG	CHUBU CENTRAIR INTL	0800	0900	27 (30)	BRISBANE	YBBBYPYX
					RJCC	SAPPORO/New Chitose	1400	1500	27 (30)	NADI	NFZZRFXX
					RJFK	KAGOSHIMA	2000	2100	27	SINGAPORE	WSZZYPYX
					RJSN	NIIGATA			27	<b>TOKYO</b>	RJTDYPYX
					RJFU	NAGASAKI			27	Beijing	ZBBBYPYX
					RJFT	KUMAMOTO			27	Beirut	OLLLYPYX
					RJOA	HIROSHIMA			27	Brasilia	SBBRYZYX
					RJOB	OKAYAMA			27	Colombo	VCBIYMYX
					RJOT	TAKAMATSU			27	Guam	PGUMCOAX
					RJFO	OITA			27	Hong Kong	VHZZYPYX
					RJNT	TOYAMA			27	Incheon	RKSIYPYX
					RJNK	KANAZAWA/Komatsu				Karachi	OPZZYPYX
										London	EGZZMASI
										Mumbai	VABBYPYX
										Noumea	NWCCYMYX
								Saipan	PGSNYMYX		
								Washington	KWBCYMYX		
							Wellington	NZZZYPYA			
		FTJP38	RJSA	AOMORI	0200	0300	27	BANGKOK	VTBBYPYX		
			RJSF	FUKUSHIMA	0800	0900	27	BRISBANE	YBBBYPYX		
			RJSK	AKITA	1400	1500	27	NADI	NFZZRFXX		
			RJOM	MATSUYAMA	2000	2100	27	SINGAPORE	WSZZYPYX		
			RJNS	SHIZUOKA			27	<b>TOKYO</b>	RJTDYPYX		
			RJEC	ASAHIKAWA (civil)			27	Beijing	ZBBBYPYX		
			RJAH	HYAKURI			27	Incheon	RKSIYPYX		
			RJCM	MEMANBETSU			27				
			RJCK	KUSHIRO			27				
			RJCB	OBIHIRO			27				
			RJOC	IZUMO			27				
			RJOH	MIHO			27				
			RJOK	KOCHI			27				
			RJFM	MIYAZAKI			27				

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ROBEX Centre		TAF Bulletin						Dissemination	
Name	CCCC	Bul No.	CCCC	Aerodrome	Filing time	Start of validity	TAF validity	RODB/ROBEX Centre	AFTN address
			ROIG RJFR	ISHIGAKI JIMA NEW KITAKYUSHU			27 27		
Wellington	NZKL	FTNZ31	NZWN	WELLINGTON Intl	0500	0600	24	BANGKOK	VTBBYPYX
			NZAA	AUCKLAND Intl	1100	1200	24	<b>BRISBANE</b>	YBBBYPYX
			NZCH	CHRISTCHURCH Intl	1700	1800	24	NADI	NFZZRFXX
					2300	0000		SINGAPORE	WSZZYPYX
									TOKYO
							Beijing	ZBBBYPYX	
							Port Moresby	AYPMYMYX	
							Hong Kong	VHZZYPYX	

1		2						3			
ROBEX Centre		TAF Bulletin						Dissemination			
Name	CCCC	Bul No.	CCCC	Aerodrome	Filing time	Start of validity	TAF validity	RODB/ROBEX Centre	AFTN address		
<b>MID REGION</b>											
Bahrain	OBBI	FTBN31	OBBI	BAHRAIN INTERNATIONAL	0500	0600	30	BANGKOK	VTBBYPYX		
			OEDR	DHAHRAN/King AbdulAziz Air Base	1100	1200	30	BRISBANE	YBBBYPYX		
			OTBD	DOHA INTERNATIONAL	1700	1800	30	SINGAPORE	WSZZYPYX		
			OKBK	KUWAIT/Intl Airport	2300	0000	30	TOKYO	RJTDYPYX		
			OEDF	DAMMAM/King Fahd International			30	Baghdad	ORBSYMYX		
								Beijing	ZBBBYPYX		
								Beirut	OLLLYPYX		
								Hong Kong	VHZZYPYX		
								Jeddah	OEJDYPYX		
								Karachi	OPZZYPYX		
							Mumbai	VABBYPYX			
							Incheon	RKSIYPYX			
							Tehran	OIIYPYX			
							Wellington	NZZZYPYX			
				FTBN32	OMAA	ABU DHABI INTERNATIONAL	0300	0600	30	BANGKOK	VTBBYPYX
					OMDB	DUBAI INTERNATIONAL	0900	1200	30	BRISBANE	YBBBYPYX
					OMSJ	SHARJAH INTERNATIONAL	1500	1800	30	SINGAPORE	WSZZYPYX
					OOMS	MUSCAT/Muscat Intl	2100	0000	30	TOKYO	RJTDYPYX
					OMRK	RAS AL KHAIMAH INTERNATIONAL			30	Baghdad	ORBSYMYX
					OMFJ	FUJAIRAH INTERNATIONAL			30	Beijing	ZBBBYPYX
		OOSA	SALALAH				30	Beirut	OLLLYPYX		
		OMAL	AL AIN				30	Hong Kong	VHZZYPYX		
		OMAD	ABU DHABI BATEEN (mil)				30	Jeddah	OEJDYPYX		
		OMDW	AL MAKTOUM/Intl					Karachi	OPZZYPYX		
							Mumbai	VABBYPYX			
							Incheon	RKSIYPYX			
							Tehran	OIIYPYX			
							Wellington	NZZZYPYX			
Beirut	OLBA	FTME31	OLBA	BEIRUT/Beirut Intl	0400	0600	30	BANGKOK	VTBBYPYX		
			OSDI	DAMASCUS/Intl	1000	1200	30	BRISBANE	YBBBYPYX		
			OSAP	ALEPPO/Intl	1600	1800	24	SINGAPORE	WSZZYPYX		
			OSLK	BASSEL AL-ASSAD/Intl. Lattakia	2200	0000	24	TOKYO	RJTDYPYX		
			OJAI	AMMAN/Queen Alia			24	Abu Dhabi	OMZZYPYX		
			OJAM	AMMAN/Marka			24	Bahrain	OBZZYPYX		
			OJAQ	AQABA/King Hussein Intl			24	Jeddah	OEJDYPYX		
								Karachi	OPZZYPYX		
					Mumbai	VABBYPYX					
					Tehran	OIIYPYX					

1		2						3	
ROBEX Centre		TAF Bulletin						Dissemination	
Name	CCCC	Bul No.	CCCC	Aerodrome	Filing time	Start of validity	TAF validity	RODB/ROBEX Centre	AFTN address
Jeddah	OEJD	FTSD31	OEJN	JEDDAH/King AbdulAziz Intl	0500	0600	30	BANGKOK	VTBBYPYX
			OEMA	MADINAH/Prince Mohammad Bin AbdulAziz Intl	1100	1200	30	BRISBANE	YBBBYPYX
			OERK	RIYADH/King Khaled Intl	1700	1800	30	SINGAPORE	WSZZYPYX
			OEDR	DHAHRAN/King AbdulAziz Air Base	2300	0000	30	TOKYO	RJTDYPYX
			OYSN	SANAA/Intl			30	Abu Dhabi	OMZZYPYX
			OEDF	DAMMAM/King Fahd Intl			30	Bahrain	OBZZYPYX
								Beirut	OLLLYPYX
								Hong Kong	VHZZYPYX
					Karachi	OPZZYPYX			
					Mumbai	VABBYPYX			
					Tehran	OIIYPYX			
Tehran	OIII	FTIR31	OIII	TEHRAN/Mehrabad Intl	0500	0600	24	BANGKOK	VTBBYPYX
			OIFM	ESFAHAN/Shahid Behesti Intl	1100	1200	24	BRISBANE	YBBBYPYX
			OISS	SHIRAZ/Shahid Dastghaib Intl	1700	1800	24	SINGAPORE	WSZZYPYX
			OIZH	ZAHEDAN/Intl	2300	0000	24	TOKYO	RJTDYPYX
			OIKB	BANDAR ABBAS/Intl			24	Abu Dhabi	OMZZYPYX
			OIMM	MASHHAD/Shahid Hashemi Nejad Intl			24	Bahrain	OBZZYPYX
			OIAW	AHWAZ			24	Beijing	ZBBBYPYX
			OIKK	KERMAN			24	Beirut	OLLLYPYX
		FTIR32	OITT	TABRIZ/Intl			24	Jeddah	OEJDYPYX
								Karachi	OPZZYPYX
								Mumbai	VABBYPYX
			OIIE	TEHRAN/Imam Khomeini Intl	0500	0600	24	BANGKOK	VTBBYPYX
			OITR	UROMIYEH	1100	1200	24	BRISBANE	YBBBYPYX
			OIBK	KISH ISLAND/Kish	1700	1800	24	SINGAPORE	WSZZYPYX
					2300	0000		TOKYO	RJTDYPYX
								Abu Dhabi	OMZZYPYX
					Bahrain	OBZZYPYX			
					Beijing	ZBBBYPYX			
					Beirut	OLLLYPYX			
					Jeddah	OEJDYPYX			
					Karachi	OPZZYPYX			
					Mumbai	VABBYPYX			
Cairo	HECA	FTEG31	HEAX	ALEXANDRIA/Intl	0400	0600	30	BANGKOK	VTBBYPYX
			HECA	CAIRO/Intl	1000	1200	30	BRISBANE	YBBBYPYX
			HELX	LUXOR/Intl	1600	1800	30	SINGAPORE	WSZZYPYX
			HEMA	MARAS /ALAM/Intl	2200	0000	30	TOKYO	RJTDYPYX
			HESN	SHARM EL SHEIKH/Intl			30		
			HEBL	ABU SIMBEL			30		
			HETB	TABA/Intl			30		
		FTEG32	HEAR	EL ARISH/Intl	0400	0600	30	BANGKOK	VTBBYPYX
			HEBA	BORG EL ARAB/Intl	1000	1200	30	BRISBANE	YBBBYPYX
			HEGN	HURGHADA/Intl	1600	1800	30	SINGAPORE	WSZZYPYX
HEMM	MERSA MATRUH	2200	0000	30	TOKYO	RJTDYPYX			

1		2						3	
ROBEX Centre		TAF Bulletin						Dissemination	
Name	CCCC	Bul No.	CCCC	Aerodrome	Filing time	Start of validity	TAF validity	RODB/ROBEX Centre	AFTN address
			HEPS	PORT SAID/Intl			30		
			HESH	SHARM EL SHEIKH/Intl			30		
			HESC	ST CATHERINE/Intl			30		

**APPENDIX C****ROBEX Exchange of METAR and TAF compared with ASIA/PAC FASID Table MET 1A****(Table C)****Explanation of the Table**

- Col. 1: Name of the aerodrome
- Col. 2: Use of the aerodrome:  
RG-international general aviation, regular use  
RS-international scheduled air transport, regular use  
RNS-international non-scheduled air transport, regular use  
AS-international scheduled air transport, alternate use  
ANS-international non-scheduled air transport, alternate use
- Col. 3: ICAO location indicator
- Col. 4: ROBEX METAR (SA) bulletin in which the aerodrome is included
- Col. 5: ROBEX TAF (FT) bulletin in which the aerodrome is included
- Col. 6: RODB responsible for the aerodrome/bulletin

**Table C : ROBEX Exchange of METAR and TAF compared with ASIA/PAC FASID Table MET 1A****AOP Aerodromes**

Name of the aerodrome	Use	ICAO loc.ind.	ROBEX SA bulletin	ROBEX FT bulletin	RODB
1	2	3	4	5	6
<b>AFGHANISTAN</b> KABUL AD KANDAHAR	RS RS	OAKB OAKN	no AFTN connection as of April 2010		
<b>AMERICAN SAMOA(United States)</b> PAGO PAGO INTERNATIONAL, TUTUILA I.	RS	NSTU	SAPS31 NFFN	FTPS31 NFFN	Nadi
<b>AUSTRALIA</b> ADELAIDE/Adelaide Intl ALICE SPRINGS BRISBANE/Brisbane Intl CAIRNS/Cairns Intl CHRISTMAS ISLAND COCOS (KEELING) ISLAND INTL DARWIN/Darwin Intl HOBART MELBOURNE/Melbourne Intl NORFOLK ISLAND INTL PERTH/Perth Intl PORT HEDLAND ROCKHAMPTON SYDNEY/Sydney (Kingsford Smith) Intl TINDAL TOWNSVILLE/Townsville Intl	RS AS RS RS RS RS RS RS RS RS RS AS RS AS RS	YPAD YBAS YBBN YBCS YPXM YPCC YPDN YMHB YMML YSNF YPPH YPPD YBRK YSSY YPTN YBTL	SAAU31 YBBN SAAU31 YBBN SAAU31 YBBN SAAU31 YBBN SAAU31 YBBN SAAU31 YBBN SAAU31 YBBN SAAU32 YBBN SAAU31 YBBN SAAU32 YBBN SAAU31 YBBN SAAU32 YBBN SAAU32 YBBN SAAU32 YBBN SAAU31 YBBN SAAU31 YBBN SAAU31 YBBN	FTAU31 YBBN FTAU32 YBBN FTAU31 YBBN FTAU32 YBBN FTAU33 YBBN FTAU33 YBBN FTAU31 YBBN FTAU33 YBBN FTAU31 YBBN FTAU33 YBBN FTAU31 YBBN FTAU33 YBBN FTAU33 YBBN FTAU33 YBBN FTAU31 YBBN FTAU32 YBBN FTAU32 YBBN	Brisbane
<b>BANGLADESH</b> M.A. HANNAN INTL. CHITTAGONG HAZRAT SHAHJALAL INTERNATIONAL AIRPORT	RS RS	VGEG VGHS	SAIN33 VECC SAIN33 VECC	FTAE32 VTBB	Bangkok
<b>BHUTAN</b> PARO/Intl	RS	VQPR	SAIN31 VABB		Bangkok
<b>BRUNEI DARUSSALAM</b> BRUNEI/Intl	RS	WBSB	SAMS31 WMKK	FTSR33 WSSS	Singapore
<b>CAMBODIA</b> PHNOM PENH SIEM REAP	RS AS	VDPP VDSR	SAAE31 VTBB SAAE31 VTBB	FTAE32 VTBB FTAE32 VTBB	Bangkok





Name of the aerodrome	Use	ICAO loc.ind.	ROBEX SA bulletin	ROBEX FT bulletin	RODB
1	2	3	4	5	6
<b>JAPAN</b>					
CHUBU CENTRAIR INTL	RS	RJGG	SAJP31 RJTD	FTJP32 RJTD	Tokyo
FUKUOKA	RS	RJFF	SAJP32 RJTD	FTJP32 RJTD	
HAKODATE	AS	RJCH	SAJP32 RJTD	FTJP31 RJTD	
HIROSHIMA	RS	RJOA	SAJP32 RJTD	FTJP32 RJTD	
KAGOSHIMA	RS	RJFK	SAJP32 RJTD	FTJP32 RJTD	
KANSAI INTL	RS	RJBB	SAJP31 RJTD	FTJP31 RJTD	
KUMAMOTO	RS	RJFT	SAJP32 RJTD	FTJP32 RJTD	
NAGASAKI	RS	RJFU	SAJP32 RJTD	FTJP32 RJTD	
NAHA	RS	ROAH	SAJP31 RJTD	FTJP31 RJTD	
NARITA INTL	RS	RJAA	SAJP31 RJTD	FTJP31 RJTD	
NIIGATA	RS	RJSN	SAJP32 RJTD	FTJP32 RJTD	
OITA	RS	RJFO	SAJP32 RJTD	FTJP32 RJTD	
OKAYAMA	RS	RJOB	SAJP32 RJTD	FTJP32 RJTD	
OSAKA INTL	AS	RJOO	SAJP31 RJTD	FTJP31 RJTD	
SAPPORO/New Chitose	RS	RJCC	SAJP32 RJTD	FTJP32 RJTD	
SENDAI	RNS	RJSS	SAJP32 RJTD	FTJP31 RJTD	
TAKAMATSU	RS	RJOT	SAJP32 RJTD	FTJP32 RJTD	
TOKYO INTL	AS	RJTT	SAJP31 RJTD	FTJP31 RJTD	
<b>KIRIBATI</b>					
CHRISTMAS ISLAND	RS	PLCH	SAPS31 NFFN	FTPS31 NFFN	Nadi
TARAWA/Bonriki Intl	RS	NGTA		FTPS31 NFFN	
<b>LAO PEOPLE'S DEMOCRATIC REPUBLIC</b>					
VIENTIANE (WATTAY)	RS	VLVT	SAAE31 VTBB	FTAE33 VTBB	Bangkok
<b>MALAYSIA</b>					
JOHOR BAHRU/Sultan Ismail	RS	WMKJ		FTSR32 WSSS	Singapore
KOTA KINABALU/Intl	RS	WBKK	SAMS31 WMKK	FTSR33 WSSS	
KUCHING/Intl	RS	WBGG	SAMS31 WMKK	FTSR33 WSSS	
PENANG/Intl	RS	WMKP	SAMS31 WMKK	FTSR32 WSSS	
PULAU LANGKAWI/Intl	RS	WMKL	SAMS38 WMKK	FTSR32 WSSS	
SELETAR	RS	WSSL	SAMS31 WMKK	FTSR31 WSSS	
SEPANG/KL International Airport	RS	WMKK	SAMS31 WMKK	FTSR32 WSSS	
<b>MALDIVES</b>					
GAN	AS	VRMG		FTIN32 VABB	Bangkok
MALE/Intl	RS	VRMM	SASB31 VCCC	FTIN32 VABB	
<b>MARSHALL ISLANDS</b>					
MAJURO ISLANDS/Intl Majuro Atoll	RS	PKMJ	SAPA31 KWBC		
<b>MICRONESIA (Federated States of)</b>					
POHNPEI INTL, POHNPEI ISLAND	RS	PTPN			
WENO ISLAND, FM CHUUK INTL.	RS	PTKK	SAPA31 KWBC		
YAP INTL, YAP ISLAND	RS	PTYA	SAPA31 KWBC		

Name of the aerodrome	Use	ICAO loc.ind.	ROBEX SA bulletin	ROBEX FT bulletin	RODB
1	2	3	4	5	6
<b>MONGOLIA</b> ULAANBAATAR	RS	ZMUB	SACI32 ZBBB	FTCI32 ZBBB	Tokyo
<b>MYANMAR</b> YANGON INTERNATIONAL	RS	VYYY	SAAE31 VTBB	FTAE32 VTBB	Bangkok
<b>NAURU</b> NAURU I.	RS	ANYN		FTNG31 YBBN	Brisbane
<b>NEPAL</b> KATHMANDU	RS	VNKT	SAIN33 VECC	FTIN32 VABB	Bangkok
<b>NEW CALEDONIA (France)</b> NOUMEA LA TONTOUTA	RS	NWWW	SAPS31 NFFN	FTPS31 NFFN	Nadi
<b>NEW ZEALAND</b> AUCKLAND INTL CHRISTCHURCH INTL WELLINGTON INTL	RS RS RS	NZAA NZCH NZWN	SANZ31 NZKL SANZ31 NZKL SANZ31 NZKL	FTNZ31 NZKL FTNZ31 NZKL FTNZ31 NZKL	Brisbane
<b>NIUE(New Zealand)</b> NIUE INTL	RS	NIUE	SAPS31 NFFN	FTPS31 NFFN	Nadi
<b>NORTHERN MARIANA ISLANDS (United States)</b> ANDERSON AFB, GUAM ISLAND FRANCISCO C. ADA/Saipan International, Obyan GUAM INTERNATIONAL, GUAM ISLAND ROTA/Intl, Rota I.	AS RS RS RS	PGUA PGSN PGUM PGRO			
<b>PAKISTAN</b> GWADAR ISLAMABAD/Chaklala KARACHI/Jinnah Int'l LAHORE/Allama Iqbal Int'l NAWABSHAH PESHAWAR	RS RS RS RS AS RS	OPGD OPRN OPKC OPLA OPNH OPPS	SAPK31 OPKC SAPK31 OPKC SAPK31 OPKC SAPK31 OPKC SAPK31 OPKC SAPK31 OPKC	FTPK31 OPKC FTPK31 OPKC FTPK31 OPKC FTPK31 OPKC FTPK31 OPKC FTPK31 OPKC	Bangkok
<b>PALAU</b> BABELTHUAP/Koro, Babelthuap Island	RS	PTRO			
<b>PAPUA NEW GUINEA</b> PORT MORESBY INTL VANIMO	RS RS	AYPY AYVN	SANG31 YBBN SANG31 YBBN	FTNG31 YBBN	Brisbane
<b>PHILIPPINES</b> DAVAO/Francisco Bangoy Intl, Davao Del Sur LAOAG, Laoag Intl, Ilocos Norte LAPU-LAPU/Mactan, Cebu MANILA/Ninoy Aquino Intl, Pasay City, Metro Manila SUBIC BAY, Subic Bay Intl, Olongapo City, Zambales ZAMBOANGA, Zamboanga Intl, Zamboanga Del Norte	RNS AS RS RS RNS RNS	RPMD RPLI RPVM RPLL RPLB RPMZ	SAHK31 VHHH SAHK31 VHHH SAHK31 VHHH SAHK31 VHHH SAHK31 VHHH SAHK31 VHHH	FTHK31 VHHH FTHK31 VHHH FTHK31 VHHH FTHK31 VHHH FTHK31 VHHH FTHK31 VHHH	Tokyo

Name of the aerodrome	Use	ICAO loc.ind.	ROBEX SA bulletin	ROBEX FT bulletin	RODB
1	2	3	4	5	6
<b>REPUBLIC OF KOREA</b>					
CHEONGJU Intl	RS	RKTU	SAKO31 RKSI	FTKO31 RKSI	Tokyo
DAEGU Intl	RS	RKTN	SAKO31 RKSI	FTKO31 RKSI	
GIMHAE Intl	RS	RKPK	SAKO31 RKSI	FTKO31 RKSI	
GIMPO Intl	RNS	RKSS	SAKO31 RKSI	FTKO31 RKSI	
INCHEON Intl	RS	RKSI	SAKO31 RKSI	FTKO31 RKSI	
JEJU Intl	RS	RKPC	SAKO31 RKSI	FTKO31 RKSI	
YANGYANG Intl	RS	RKNY	SAKO31 RKSI	FTKO31 RKSI	
MUAN Intl	RS	RKJB	SAKO31 RKSI	FTKO31 RKSI	
<b>SAMOA</b>					
FALEOLO/Faleolo Intl	RS	NSFA	SAPS31 NFFN	FTPS31 NFFN	Nadi
<b>SINGAPORE</b>					
PAYA LEBAR (RSAF)	AS	WSAP	SAMS31 WMKK SAMS31 WMKK	FTSR31 WSSS	Singapore
SELETAR	RS	WSSL		FTSR31 WSSS	
SINGAPORE/Changi	RS	WSSS		FTSR31 WSSS	
<b>SOLOMON ISLANDS</b>					
HONIARA (HENDERSON)	RS	AGGH	SANG31 YBBN	FTNG31 YBBN	Brisbane
<b>SRI LANKA</b>					
BANDARANAIKE INTERNATIONAL AIRPORT COL HIGURAKGODA/Mineriyā	RS AS	VCBI VCCH	SASB31	FTIN32 VABB	Bangkok
<b>THAILAND</b>					
BANGKOK/Don Mueang Intl Airport	RS	VTBD	SAAE31 VTBB	FTAE31 VTBB	Bangkok
BANGKOK/Suvarnabhumi Intl Airport	RS	VTBS	SAAE31 VTBB	FTAE31 VTBB	
CHIANG MAI/Chiang Mai Intl. Airport	RS	VTCC	SAAE31 VTBB	FTAE31 VTBB	
CHIANG RAI/Chiang Rai Intl Airport	RS	VTCT	SATH31 VTBB	FTAE31 VTBB	
KHON KAEN	RS	VTUK	SATH33 VTBB	FTTH33 VTBB	
KRABI	RS	VTSG	SATH32 VTBB	FTAE31 VTBB	
PHITSANULOK	RS	VTTP	SATH31 VTBB	FTTH31 VTBB	
PHUKET/Phuket Intl Airport	RS	VTSP	SAAE31 VTBB	FTAE31 VTBB	
RAYONG/U-Taphao Intl Airport	RS	VTBU	SAAE31 VTBB	FTAE31 VTBB	
SONGKHLA/Hat Yai Intl Airport	RS	VTSS	SAAE31 VTBB	FTAE31 VTBB	
SURAT THANI	RS	VTSB	SATH32 VTBB	FTTH32 VTBB	
UBON RATCHATHANI	RS	VTUU	SATH33 VTBB	FTAE31 VTBB	
<b>TONGA</b>					
FUA'AMOTU INTL.	RS	NFTF	SAPS32 NFFN	FTPS31 NFFN	Nadi
VAVA'U	RS	NFTV	SAPS32 NFFN	FTPS31 NFFN	
<b>TUVALU</b>					
FUNAFUTI/Intl	RS	NGFU	SAPS31 NFFN		Nadi

Name of the aerodrome	Use	ICAO loc.ind.	ROBEX SA bulletin	ROBEX FT bulletin	RODB
1	2	3	4	5	6
<b>UNITED STATES</b>					
ANCHORAGE/Anchorage Intl	RS	PANC	<b>Not required for regular ROBEX exchange, but to be available on request through Tokyo RODB</b>		Tokyo
ANCHORAGE/Elmendorf AFB	AS	PAED			
COLD BAY/Cold Bay	AS	PACD			
EVERETT/Snohomish County	AS	KPAE			
FAIRBANKS/Eielson AFB	AS	PAEI			
FAIRBANKS/Fairbanks Intl	RS	PAFA			
FRESNO/Fresno Air Terminal	AS	KFAT			
HILO/General Lyman Field	AS	PHTO			
HONOLULU/Barbers Points NAS	AS	PHNA			
HONOLULU/Honolulu Intl	RS	PHNL			
KAHULUI/Kahului	AS	PHOG			
KING SALMON/King Salmon	AS	PAKN			
LOS ANGELES/Los Angeles Intl	RS	KLAX			
OAKLAND/Metropolitan Oakland	AS	KOAK			
ONTARIO/Ontario Intl	AS	KONT			
PALMDALE/Palmdale P.F.T.I.	AS	KPMD			
PORTLAND/Portland Intl	AS	KPDX			
SACRAMENTO/Metropolitan	AS	KSMF			
SAN DIEGO/Lindbergh Field	AS	KSAN			
SAN FRANCISCO/San Francisco	RS	KSFO			
SAN JOSE/San Jose Intl	RS	KSJC			
SEATTLE BOEING FIELD/King County Intl	AS	KBFI			
SEATTLE/Seattle-Tacoma Intl	RS	KSEA			
SPOKANE/Spokane Intl	AS	KGEG			
STOCKTON/Metropolitan	AS	KSCK			
WASHINGTON/Dulles Intl	RS	KIAD			







## APPENDIX E

## USE OF WMO ABBREVIATED HEADING

(for use in ROBEX Messages/Bulletins)

1. Each ROBEX 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:

**T<sub>1</sub>T<sub>2</sub>A<sub>1</sub>A<sub>2</sub>ii CCCC YYGGgg (BBB)**

2. Explanation of the symbols

- 2.1. **T<sub>1</sub>T<sub>2</sub>A<sub>1</sub>A<sub>2</sub>ii** – 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 **T<sub>1</sub>T<sub>2</sub>** - Data type designator, used for OPMET data as follows:

Data type	Abbreviated name	WMO data type designator T <sub>1</sub> T <sub>2</sub>
Aerodrome reports	METAR SPECI	SA SP
Aerodrome forecasts	TAF:       12 to 30 hour 9 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/AIREP Special	UA
Administrative	ADMIN	NO

*Note that IATA TAF requirements in the ASIA/PAC region are for TAF validity of either 24 or 30 hours. Some States issue 12- and 18-hour TAF which don't meet requirements, but are nevertheless classified as FT for the WMO data type designator.*

- 2.1.2 **A<sub>1</sub>A<sub>2</sub>** - 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 ROBEX bulletins containing OPMET data from a single State or territory, the A<sub>1</sub>A<sub>2</sub> designator should be chosen from Table C1, Part I – Country or territory designators;

- b) For ROBEX bulletins containing OPMET data from more than one State or territory, a suitable A<sub>1</sub>A<sub>2</sub> 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 ROBEX scheme is reproduced bellow.

A <sub>1</sub> A <sub>2</sub>	Country or territory
AE	Southeast Asia
AF	Africa
AH	Afghanistan
AK	Alaska
AS	Asia
AU	Australia
AW	Near East
AX	Arabian Sea area
BD	Brunei Darussalam
BM	Myanmar
BN	Bahrain
BW	Bangladesh
CI	China
EC	East China Sea area
ER	United Arab Emirates
FE	Far East
GM	Guam Islands
HK	Hong Kong, China
ID	Indonesia
IN	India
IO	Indian Ocean area
IQ	Iraq
IR	Islamic Republic of Iran
JD	Jordan
JP	Japan
KB	Kiribati
KO	Republic of Korea
KP	Cambodia
KR	Democratic People's Republic of Korea
KU	Cook Islands

<b>A<sub>1</sub>A<sub>2</sub></b>	<b>Country or territory</b>
KW	Kuwait
LA	Lao People's Democratic Republic
LB	Lebanon
<b>ME</b>	<b>Eastern Mediterranean area</b>
MH	Marshall Islands
MS	Malaysia
MU	Macao
MV	Maldives
NC	New Caledonia
NG	Papua New Guinea
NP	Nepal
NV	Vanuatu
NW	Nauru Island
NZ	New Zealand
<b>OC</b>	<b>Oceania</b>
OM	Oman
<b>PA</b>	<b>Pacific area</b>
PF	French Polynesia
PH	Philippines
PK	Pakistan
<b>PN</b>	<b>North Pacific area</b>
<b>PQ</b>	<b>Western North Pacific</b>
<b>PS</b>	<b>South Pacific area</b>
<b>PW</b>	<b>Western Pacific area</b>
<b>PZ</b>	<b>Eastern Pacific area</b>
QT	Qatar
SB	Sri Lanka
SD	Saudi Arabia
<b>SJ</b>	<b>Sea of Japan area</b>
SO	Solomon Islands
SR	Singapore
<b>SS</b>	<b>South China Sea area</b>
SY	Syrian Arab Republic
TH	Thailand
TM	Timor

<b>A<sub>1</sub>A<sub>2</sub></b>	<b>Country or territory</b>
TO	Tonga
TV	Tuvalu
US	United States of America
VS	Vietnam
YE	Republic of Yemen
ZM	Western Samoa

2.1.3 **ii** - series number of the bulletin. It shall be a number with two digits used to differentiate two or more bulletins with the same TTAA issued by an originator or a compiler of bulletins. “ii” will be unique to each bulletin.

2.1.3.1 The rules of assigning “ii” to bulletins are as follows:

- Bulletins containing reports prepared at the main synoptic hours for the stations included in the Regional Basic Synoptic Networks or stations included in the Regional Basic Climatological Networks shall be compiled into bulletins with ii in the series 01 to 19
- Bulletins containing "additional" data as defined in Resolution 40 (Cg-XIII) shall be compiled into bulletins with ii above 19.

2.1.3.2 For most of the ROBEX bulletins “ii” should be selected from the set “20 – 39”. In case of METAR/TAF bulletins, ROBEX centres issuing only one bulletin should use "31", whilst ROBEX centres issuing more than one bulletin should use "31", "32", etc. AIREP/AIREP Special bulletins should bear "31". SIGMET and advisory messages, which are required globally, may use ii numbers of the set “01 – 19” or “20 – 39”.

2.2. **CCCC** - ICAO location indicator, according to Location Indicators, ICAO Doc 7910, of the ROBEX centre preparing the ROBEX Bulletin, or of the originator (aeronautical meteorological station, aerodrome meteorological office or NOC).

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,  
-and for segmenting a large set of information into several bulletins;
- CCx – for corrections to previously relayed messages/bulletins;
- AAx – for amendments to TAF messages/bulletins;

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.

2.4.2 The current limitation of the AFTN regarding the length of the bulletins is up to 1800 characters (note that the WMO Header and spaces are counted as characters). Bulletins longer than this will be split into two parts; in such a case, the optional group RRx is used for additional or subsequent issuances of messages with the same abbreviated heading line including the YYGGgg regardless whether these reports are on time, late or delayed. Effective 1 February 2010 (as agreed upon by the RODBs and ROBEX BCCs), the Asia/Pacific Region utilizes RRA for the second part of a split bulletin. An example of a split bulletin using RRA is provided.

*Note: The optional group Pxx for use of bulletin splitting was removed from the WMO Manual on the Global Telecommunication System (WMO – No. 386) effective 7 November 2007.*

#### Example of split bulletin applicable in the ASIA/PAC Region since 1 February 2010

```
GG WSSSYMYX
171000 VABBYMYX
FTIN32 VABB 170900
TAF VCBI 170940Z 1712/1812 23012KT 9999 SCT016 TX30/1808Z
  TN27/1723Z TEMPO 1714/1718 7000 -SHRA FEW010 SCT016
  TEMPO 1723/1802 7000 -SHRA SCT010 BKN016=
TAF VNKT 170900Z NIL=
TAF VOVI 170900Z 1712/1818 29005KT 4000 -RA/HZ SCT015 SCT020 FEW025CB
  BKN100 BECMG 1716/1717 3000 -RA/HZ TEMPO 1712/1721 1500 TSRA/SHRA
  SCT008 SCT012 FEW025CB OVC080 BECMG 1804/1805 30005KT 4000 HZ
  BECMG 1806/1807 27010KT 5000 -RA/HZ TEMPO 1809/1815 1500
  TSRA/SHRA SCT008 SCT012 FEW025CB OVC080 BECMG 1816/1817 3000 HZ=
TAF VOCL 170900Z 1712/1818 33005KT 4000 -RA/HZ SCT015 SCT020 FEW025CB
  BKN100 BECMG 1716/1717 3000 -RA/HZ TEMPO 1712/1721 2000 TSRA/SHRA
  SCT008 SCT012 FEW025CB OVC080 BECMG 1804/1805 35005KT 5000 HZ
  BECMG 1806/1807 32010KT 5000 -RA/HZ TEMPO 1809/1815 2000
  TSRA/SHRA SCT008 SCT012 FEW025CB OVC080 BECMG 1816/1817 3000 HZ=
TAF VOHS 170900Z 1712/1818 27010G20KT 6000 SCT020 SCT100 TEMPO
  1712/1718 3000 -TSRA/RA SCT015 FEW025CB BKN080 TEMPO 1721/1803
  3000 -TSRA/RA/HZ SCT015 FEW025CB BKN080 TEMPO 1809/1818 3000
```

-TSRA/RA SCT015 FEW025CB BKN080=  
TAF VOHY 170900Z NIL=  
TAF VOMM 170900Z 1712/1818 17010KT 6000 SCT020 BKN100 TEMPO  
1712/1718 SCT015 FEW025CB BKN100 BECMG 1720/1721 21010KT SCT020  
BECMG 1803/1804 27010KT 8000 FEW020 SCT100 BECMG 1810/1811  
13010KT TEMPO 1812/1815 SCT015 FEW025CB BKN100 BECMG 1813/1814  
6000=  
TAF VOTR 170900Z 1712/1818 27010KT 6000 SCT020 SCT100 TEMPO  
1712/1715 SCT015 FEW025CB BKN100 BECMG 1716/1717 33005KT FEW020  
BECMG 1803/1804 27010G20KT 8000 FEW020 SCT250 BECMG 1812/1813  
27005KT 6000 TEMPO 1812/1815 SCT015 FEW025CB BKN100=

GG WSSSYMYX  
171000 VABBYMYX  
FTIN31 VABB 170900 **RRA**  
TAF VIJP 170900Z 1712/1818 28006KT 4000 HZ FEW030 BECMG 1803/1805  
29005G15KT 3000 HZ FEW030 SCT100 TEMPO 1712/1716 FEW030CB=  
TAF VILK 170900Z 1712/1721 34005KT 6000 NSC BEC 1716/1718 VRB02KT  
5000 HZ=

**APPENDIX F****EXCHANGE OF OPMET DATA BETWEEN THE MID, ASIA AND AFI REGIONS**

*Note: Information contained in this Appendix is taken from Edition 11<sup>th</sup> of the ROBEX Handbook (1998) since no updates have been received.*

**CAIRO AMBEX ODREP****1. Outgoing responsibilities**

1.1 Prepare TAF bulletin FTAF38 containing Cairo (HECAYMYX), Luxor (HELXYMYX), Khartoum (HSSSYMYX), Alger (DAMMYMYX), Tunis (DTTAYMYX), Benghazi (HLLBYMYX) and Tripoli (HLLTYMYX) and send it to Jeddah (OEJDYPYX) ODREP.

**2. Incoming Responsibilities**

2.1 Relay Jeddah TAF bulletin FTAS31 to Alger and Cairo TCCs.

2.2 Relay Beirut TAF bulletin FTAW31 to Cairo, Tripoli and Tunis.

2.3 Relay Bahrain TAF bulletin FTPE31 to Cairo and Khartoum.

2.4 Relay Bangkok TAF bulletin FTAE31 to Cairo.

**DAKAR AMBEX ODREP****1. Outgoing responsibilities**

1.1 Prepare TAF bulletin FTAF38 containing Conakry (GUCYYMYX), Dakar (GOOYYMYX), Freetown (GFLLYMYX), Lagos (DNMMYMYX), Las Palmas (GCLPYMYX), Luanda (FNLUYMYX), Nouakchott (GQNNYMYX) and Tenerife Sur (GCTSYMYX) and send it to Rio de Janeiro.

**2. Incoming responsibilities**

2.1 Prepare TAF bulletin FTSA38 containing Ascuncion, Buenos Aires, Campo Grande, Mendoza, Montevideo, Recife, Rio de Janeiro, Salvador, Santiago and Sao Paulo and send it to Abidjan, Casablanca, Dakar, Lagos and Luanda.

## NAIROBI AMBEX ODREP

### 1. Outgoing Responsibilities

1.1 Prepare TAF bulletin FTEA38 containing Nairobi (HKNAYPYX), Mombasa (HKMOYMYX), Dar-es-Salam (HTDAYMYX), Kilimanjaro (HTKJYMYX), Entebbe (HUENYMYX) and Mahé (FSIAYMYX) and send it to Jeddah (OEJDYPYX) ODREP and Bombay (VABBYPYX).

1.2 Relay Antananarivo TAF bulletin FTI031 to Jeddah ODREP and Bombay.

1.3 Relay Addis Ababa TAF bulletin FTEA31, Antananarivo TAF bulletin FTI031, Lusaka TAF bulletin FTAP31 and Nairobi TAF bulletin FTEA32 via GTS link Nairobi-Offenbach to EUR (LFZZ).

### 2. Incoming Responsibilities

2.1 Relay Bombay TAF bulletin FTAS31 to Nairobi.

2.2 Relay Jeddah TAF bulletin FTAS31 to Antananarivo TCC and to Nairobi, Dar-es-Salaam and Mahe.

2.3 Receive via GTS from Offenbach selected MOTNE TAF bulletins and relay them as follows:

MOTNE Bulletins/ Bulletins MOTNE	To aerodromes / Vers les aérodomes					
	Addis Ababa	Djibouti	Harare	Khartoum	Lusaka	Nairobi
FTBX31						x
FTDL31						x
FTFR31		x				x
FTGR31	x			x		x
FTIY31	x					x
FTNL31				x		x
FTSW31						x
FTUK31			x		x	x

**Format of METNO bulletin for APAC ROBEX Bulletins****METNO Message Format (Example):**

Priority	GG
Addressees of ROBEX Centres and RODBs	VTBBYPYX ZBBBYPYX YBBNYPYX VCCCPYX VIDPYPYX VHZZYPYX RKSIPYX WIZZYPYX VECCYPYX OPZZYPYX WMZZYPYR VABBYPYX NFFNYPYX RJTDYPYX NZZZYPYX WSZZYPYM
Origin	ddhmm WSSSYPYX
Abbreviated header	TTAA99 CCCC YYGGgg  Example: NOSR99 WSSS 180200
Message identifier, region description, date of implementation (year, month, date):	METNO APAC OPMET YYMMDD
New Bulletin ( <b>NEWBUL</b> )	NEWBUL (description of new bulletin and content)
Delete Bulletin ( <b>DELBUL</b> )	DELBUL (description of bulletin to be deleted and content)
Add Report to existing bulletin ( <b>ADDRPT</b> )	ADDRPT (description of added aerodromes to existing bulletin)
Remove Report from existing bulletin ( <b>RMVRPT</b> ) + Bulletin/Report key (TTAAii CCCC Station)(1)	RMVRPT (description of aerodromes to be deleted from existing bulletin)
End of METNO	END=

(1) The METNO Bulletin/Report reference only contains the Bulletin/Report index TTAAii CCCC<sub>1</sub> CCCC<sub>2</sub> where:

- TTAAii is the abbreviated header
- CCCC<sub>1</sub> the compiling centre
- CCCC<sub>2</sub> the Report | FIR location indicator.

The index refers to the modified record in the OPMET catalogue published on the FTP-server(s). The dates on the relevant records shall contain the AIRAC date in the line after the abbreviated header.

Example of a METNO message in AFTN format:

```
GG
NOSR99 WSSS 180200
METNO APAC OPMET 061115
NEWBUL FTSR33 WSSS WBSB WBGB WBGG WBGR WBGS
                WBKK WBKL WBKS WBKW
RMVRPT FTSR31 WSSS WMKK WMSA WMKP WMKJ
ADDRPT FTSR31 WSSS WAAA WABB WIMM
RMVRPT FTSR32 WSSS WBSB WBKK WBGG WIMM
ADDRPT FTSR32 WSSS WMKJ WMKK WMKL WMKM WMKP WMSA
END=
```

## APPENDIX H

## OPMET Quality Control and Monitoring Procedures

(Developed by the QC team of the OPMET Management Task Force)

1 Quality Control Procedures1.1 *OPMET Data Validation*

1.1.1 The ROBEX 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 <b>UTC</b> VYMD 100830Z 18005KT 8000 FEW025 31/18 Q1000 =	SABM31 VYMD <b>100830</b> 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=	<b>FTID31 WIDD 112300</b> TAF WIDD 112324Z 1200/1224 00000KT 4000 RA BKNT017 BECMG 1203/1205 20010KT 9000 SCT017=
TAF with invalid BBB: FTBN31 OBBI 030525 <b>AMD</b> TAF AMD OBBI 030525Z 0306/0406 16010KT CAVOK BECMG 0308/0312 33017KT 5000 PROB30 TEMPO 0308/0314 0800 DU=	FTBN31 OBBI 030525 <b>AAA</b> TAF AMD OBBI 030525Z 0306/0406 16010KT CAVOK BECMG 0308/0312 33017KT 5000 PROB30 TEMPO 0308/0314 0800 DU=

1.1.3 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
<p>METAR with Observation Time error:</p> <p>SAPK31 OPKC <b>030159</b> RRA OPKC <b>030200</b> 26004 8000 BKN020 27/23 Q1007 NOSIG=</p>	<p>After QC check</p> <p>SAPK31 OPKC <b>030200</b> RRA OPKC <b>030200</b> 26004 8000 BKN020 27/23 Q1007 NOSIG=</p>
<p>METAR with mistyped observation time:</p> <p>SAID31 WADD <b>120100</b> METAR WADD <b>121000Z</b> 17004KT 9999 FEW018CB SCT120 BKN300 28/26 Q1005=</p>	<p>SAXX31 WADD <b>120100</b> METAR WADD <b>120100Z</b> 17004KT 9999 FEW018CB SCT120 BKN300 28/26 Q1005=</p>
<p>SPECI with incorrect Message Type, TT:</p> <p><b>SANZ31</b> NZKL 040000 <b>SPECI</b> NZWP 040000Z 17005KT 010V240 25KM FEW020 FEW020CB SCT035 BKN050 18/15 Q1018 NOSIG=</p>	<p><b>SPNZ31</b> NZKL 040000 AAA <b>SPECI</b> NZWP 040000Z 17005KT 010V240 25KM FEW020 FEW020CB SCT035 BKN050 18/15 Q1018 NOSIG=</p>

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 <sub>1</sub> Y <sub>1</sub> G <sub>1</sub> G <sub>1</sub> /Y <sub>2</sub> Y <sub>2</sub> G <sub>2</sub> G <sub>2</sub>	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
<p>TAF with issue time error (wrong date):</p> <pre>FCID31 WIII 181630 TAF WIII 041630Z 0418/0503 00000KT 9000 FEW025 BECMG 0422/0424 16005KT=</pre>	<pre>FCID31 WIII 181630 TAF WIII 181630Z 0418/0503 00000KT 9000 FEW025 BECMG 0422/0424 16005KT=</pre>
<p>TAF with mistyped Validity Period:</p> <pre>FTPH31 RPLL 132200 TAF RPLC 132200Z 1400/1428 04006KT 9999 SCT036 BKN300 TEMPO 1400/1406 02010KT 5000 -SHRA FEW020 BKN270 TX32/1405Z TN22/1421Z=</pre>	<pre>FTPH31 RPLL 132200 TAF RPLC 132200Z 1400/1424 04006KT 9999 SCT036 BKN300 TEMPO 1400/1406 02010KT 5000 -SHRA FEW020 BKN270 TX32/1405Z TN22/1421Z=</pre>
<p>TAF with Validity error (wrong date):</p> <pre>FCMS33 WMKK 170748 TAF WMKK 170700Z 3009/3018 30005KT 9999 FEW017CB SCT140 BKN270=</pre>	<pre>FCMS33 WMKK 170748 TAF WMKK 170700Z 1709/1718 30005KT 9999 FEW017CB SCT140 BKN270=</pre>
<p>TAF with 4-digit Validity period:</p> <pre>FTXX31 WIDD 170121 TAF WIDD 0618 06010G20KT 9999 SCT018 BECMG 1712/1714 00000KT 7000=</pre>	<pre>FTXX31 WIDD 170121 TAF WIDD 1706/1718 06010G20KT 9999 SCT018 BECMG 1712/1714 00000KT 7000=</pre>

1.1.5 SIGMET Validation

CCCC on the AHL	A valid 4-letter ICAO location indicator indicating the FIR for which the SIGMET was.	
Prefix checks	SIGMET for TS, CB, TURB, ICE, MTW, DS and SS SIGMET for VA SIGMET for TC	WS  WV WC
Validity Period DDHHMM/DDHHMM	Shall have a valid period of validity. Validity periods may be corrected if: <ul style="list-style-type: none"> <li>• Missing VALID string</li> <li>• Incorrect SIGMET number format</li> <li>• Incorrectly formatted validity period</li> </ul>	
Note: For SIGMET validation, please refer to the format described in the ASIA/PAC Regional SIGMET Guide.		

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

1.2 Quality Control Methods

OPMET Data	Elements Defining	Control Methods
METAR METAR COR SPECI  (SA,SP)	<ul style="list-style-type: none"> <li>• AHL</li> <li>• Code name</li> <li>• Observation date/time</li> </ul>	Software verification  Manual validate  Periodic Quality Control & PI Monitoring
TAF TAF AMD TAF COR  (FT,FC)	<ul style="list-style-type: none"> <li>• AHL</li> <li>• Code name</li> <li>• Originating station ICAO location indicator</li> <li>• Date/time of issue</li> <li>• Date, time of starting, time of end of the period the forecast refers to</li> </ul>	Software verification  Manual validate  Periodic Quality Control & PI Monitoring
SIGMET (WS, WC, WV)	<ul style="list-style-type: none"> <li>• AHL</li> <li>• SIGMET Sequence No</li> <li>• Date/time groups indicating the period of validity</li> </ul> <p>Additional Checks (recommended):</p> <ul style="list-style-type: none"> <li>• Name of the FIR or the CTA the message is issued for</li> <li>• Location indicator of the MWO originating the message</li> </ul>	Software verification  Manual validate  Periodic SIGMET Quality Control Monitoring
Volcanic Ash Advisory FV	<ul style="list-style-type: none"> <li>• Type of message</li> <li>• Issue date and time</li> </ul> <p>Additional Checks (recommended):</p> <ul style="list-style-type: none"> <li>• Location indicator or name of the VAAC centre originating the message</li> </ul>	Software verification  Manual validate  Periodic VA Quality Control Monitoring
Tropical Cyclone Advisory FK	<ul style="list-style-type: none"> <li>• Type of message</li> <li>• Issue date and time</li> </ul> <p>Additional Checks (recommended):</p> <ul style="list-style-type: none"> <li>• Location indicator or name of the TCAC centre originating the message</li> </ul>	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*).

#### (i) *Compliance Index*

The ROBEX 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 ROBEX scheme. The determination of the compliance index is performed as follows:

- Total number of reports received for ROBEX 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 ROBEX 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  $\mu$  and  $\sigma$ , a threshold report numbers ( $\tau$ ) can be established as:

$$\tau = \mu - \sigma$$

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.

2.2.3 Example non-routine OPMET monitoring result file formats:

<b>TT</b>	<b>AAii</b>	<b>CCCC</b>	<b>YYGGgg</b>	<b>FIR/UIR</b>	<b>Rx Time</b>	<b>Origin</b>
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 Office, Bangkok.

2.3 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
AU32 YBBN	0.98	0.94	
BN31 OBBI	0.96	0.92	
BN32 OBBI	0.94	0.95	
CI31 ZBBB	0.99	0.99	
CI32 ZBBB	0.99	0.99	
CI41 ZBBB	0.93	0.99	
EG31 HECA	--	0.85	
HK31 VHHH	0.99	0.99	1.00
ID31 WIII	0.74	--	
IN31 VIDP	--	0.97	
IN31 VABB	0.74	--	0.97
IN32 VIDP	0.73	--	
IR31 OIII	0.84	0.93	
JP31 RJTD	1.00	1.00	1.00
JP32 RJTD	1.00	1.00	1.00
KO31 RKSI	1.00	0.96	
ME31 OLBA	--	0.86	
MS31 WMKK	1.00	--	
NZ31 NZKL	0.95	1.00	
PK31 OPKC	0.91	0.80	
SB31 VCCC	0.97	--	
SD31 OEJD	0.95	--	
SR31 WSSS	--	0.98	0.99
SR32 WSSS	--	1.00	
TH31 VTBB	0.67	1.00	
TH32 VTBB	0.76	0.91	
TH33 VTBB	0.75	0.94	

**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
AU32 YBBN	1.00	1.00	
BN31 OBBI	1.00	1.00	
BN32 OBBI	1.00	0.99	
CI31 ZBBB	1.00	1.00	
CI32 ZBBB	1.00	1.00	
CI41 ZBBB	1.00	1.00	
EG31 HECA	--	1.00	
HK31 VHHH	1.00	1.00	1.00
ID31 WIII	0.98	--	
IN31 VIDP	--	1.00	
IN31 VABB	1.00	--	1.00
IN32 VIDP	0.98	--	
IR31 OIII	1.00	1.00	
JP31 RJTD	1.00	1.00	1.00
JP32 RJTD	1.00	1.00	1.00
KO31 RKSI	1.00	1.00	
ME31 OLBA	--	0.99	
MS31 WMKK	1.00	--	
NZ31 NZKL	--	1.00	
PK31 OPKC	1.00	0.99	
SB31 VCCC	1.00	--	
SD31 OEJD	1.00	--	
SR31 WSSS	--	1.00	1.00
SR32 WSSS	--	1.00	
TH31 VTBB	0.97	1.00	
TH32 VTBB	0.88	1.00	
TH33 VTBB	0.83	1.00	

TABLE C	Regularity Index		
	SA	FT	FC
AE31 VECC	0.86	--	
AS31 VABB	--	0.96	
AS31 VTBB	0.93	0.96	
AS32 VABB	--	0.96	
AS32 VTBB	--	0.96	
AU31 YBBN	0.90	0.90	0.96
AU32 YBBN	0.93	0.91	
BN31 OBBI	0.93	0.94	
BN32 OBBI	0.82	0.89	
CI31 ZBBB	0.96	0.94	
CI32 ZBBB	0.93	0.91	
CI41 ZBBB	0.94	0.97	
EG31 HECA	--	0.77	
HK31 VHHH	0.93	0.97	0.85
ID31 WIII	0.92	--	
IN31 VIDP	--	0.84	
IN31 VABB	0.84	--	0.97
IN32 VIDP	0.88	--	
IR31 OIII	0.71	1.00	
JP31 RJTD	1.00	1.00	1.00
JP32 RJTD	1.00	1.00	1.00
KO31 RKSI	0.84	1.00	
ME31 OLBA	--	0.97	
MS31 WMKK	0.98	--	
NZ31 NZKL	0.82	1.00	
PK31 OPKC	0.84	0.97	
SB31 VCCC	0.96	--	
SD31 OEJD	0.89	--	
SR31 WSSS	--	0.99	0.95
SR32 WSSS	--	0.99	
TH31 VTBB	0.92	1.00	
TH32 VTBB	0.85	0.96	
TH33 VTBB	0.89	0.94	

## APPENDIX I

## ROBEX FOCAL POINTS (update April 2011)

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<b>STATE/ ADMINISTRATION</b>	<b>NAME/DESIGNATION AND ADDRESS</b>	<b>TEL/FAX AND E-MAIL</b>
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