International Civil Aviation Organization

THIRTEENTH MEETING OF THE ASIA/PACIFIC REGIONAL OPMET BULLETIN EXCHANGE WORKING GROUP (ROBEX WG/13)

Seoul, Republic of Korea, 16 – 18 March 2015

Agenda Item 5:   **Guidance material**

ROBEX HANDBOOK UPDATES

(Presented by the Secretariat)

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SUMMARY

This paper presents a draft amendment to the Regional OPMET Bulletin Exchange (ROBEX) Handbook for review and possible adoption by the ROBEX WG.

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1.   INTRODUCTION

1.1   Improved OPMET availability and reliability is needed to support flight planning (efficiency) and in-flight re-planning (safety). In the Asia/Pacific, the ROBEX Handbook is the main guidance material for the optimization of OPMET exchange under the ROBEX scheme. The ROBEX Handbook defines the responsibilities and procedures for the ROBEX centres and the content and format of the ROBEX bulletins.

1.2   The ROBEX WG conducts a regular review of the ROBEX Handbook, which is published and kept up-to-date by the ICAO Office, Bangkok, in coordination with ICAO Office, Cairo, with input provided by the ROBEX WG. This paper presents a draft amendment to the ROBEX Handbook for review and possible adoption by the meeting.

2.   DISCUSSION

2.1   The meeting is reminded that the last update to the ROBEX Handbook was published in August 2013. It is available at the following web site: http://www.icao.int/APAC/Pages/edocs.aspx.

2.2   Subsequent recommendations for updates were discussed and agreed at the ROBEX WG/12 meeting, in Beijing, China, 17 to 19 March 2014, and the MET SG/18 meeting, in Beijing, China, 18 to 21 August 2014 (including ROBEX WG action agreed 12/4 and 12/8). The recommendations included a review of the guidance on performance indices for OPMET monitoring exercises, a review and possible streamlining of the arrangements specified for Inter-Regional OPMET Gateways (IROG), the realignment of guidance on the filing time of TAF with Amendment 76 to Annex 3, a new map of the air traffic service message handling system (AMHS) and the

realignment of the OPMET bulletins with recent amendments to OPMET requirements in Indonesia and Viet Nam.

2.3   A draft amendment to the ROBEX Handbook incorporating most of the input suggested above is provided in the **Attachment 2** to this paper. A listing of the proposed changes in the draft amendment is also provided in **Attachment 1** to this paper.

2.4   The meeting is advised that the draft amendment to the ROBEX Handbook does not include changes to realign the OPMET bulletin tables with the recent changes to location indicators published by the Directorate General of Civil Aviation, Indonesia on January 8th, 2015, in Aeronautical Information Publication Supplement Number 01/15. Such changes must first be proposed and published in ICAO Location Indicators (Doc 7910) and then subsequent amendments to FASID Tables may be processed and approved. The ROBEX Handbook OPMET bulletin Tables could then be amended accordingly.

2.5   In view of the changes to location indicators discussed above, it would be beneficial for the Secretariat to coordinate closely with Indonesia and the RODBs in order to formulate the necessary additional ROBEX Handbook updates as quickly as possible for the next available amendment.

2.6   The draft amendment presented does include some updates for ROBEX Handbook Appendix C – *ROBEX Exchange of METAR and TAF compared with ASIA/PAC FASID Table MET 1A*, however the meeting is reminded that the purpose of Appendix C is not explicitly defined in the ROBEX Handbook and, therefore, some States may not have provided required information to ensure that Appendix C (and therefore the OPMET bulletin Tables for METAR and TAF in Appendices A and B) are kept up to date with current requirements.

2.7   The meeting is advised that the draft amendment presented in this paper does, however, incorporate the proposals for OPMET bulletin updates provided to this meeting by Australia in IP/4.

3.   ACTION BY THE MEETING

3.1   The meeting is invited to:

   a)   Review the draft ROBEX Handbook amendment;

   b)   Discuss relevant issues; and

   c)   Adopt the amendment to the ROBEX Handbook.

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ROBEX Handbook – list of updates – 2015 (blue shaded cells indicate updates provided by ROBEX WG/13)

Section/page	Amendment	Notes/reasoning
Page 2, par. 2.4.1	"… In order to achieve these tasks, the ROBEX implementation status and planning is part of the agenda of the CNS/MET and/or MET sub-groups of the two PIRGs".	Reflect current framework of sub groups under APANPIRG i.e., MET SG)
Page 4, par. 3.1.1	"…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. The ASIA/PAC Regional Air Navigation Plan does not include any requirement for 9-hour validity aerodrome forecasts in TAF code (9H) classified as FC for the WMO data type designator".	Clarify that there are no requirements for 9-hour TAF in ASIA/PAC.
Page 5, par. 3.3.2.2	"Inter-regional OPMET exchange via IROGs is carried out through the ground segment of the AFS (currently, through the AFTN or AMHS)".	To reflect the transitional state of AMHS implementation
Page 5, par. 3.3.4.1	"Where OPMET exchanges described in the above paragraphs are not sufficient, direct AFTN or AMHS addressing should be utilized by the originating centres or NOCs"	To reflect the transitional state of AMHS implementation
Page 6, par. 4.1.2	"National OPMET center (NOC). Normally, a NOC is associated with the State's national AFTN centre/switch or AMHS. The …"	To reflect the transitional state of AMHS implementation
Page 8	In the diagram: Replace SADIS with SADIS / Secure SADIS FTP Replace ISCS with WIFS Under RODB Bangkok, replace IROG-MID with IROG-MID/AFI Under RODB Brisbane, add IROG-AFI Add connections to OPMET Centres FAPR and GOOY from RODB Bangkok and RODB Brisbane	Update nomenclature with respect to current distribution of OPMET information from SADIS and WIFS Provider States. Realign diagram with current inter-regional OPMET exchange between APAC and AFI Region.
Page 8	In the diagram: Remove the line connecting RODB Brisbane and RODB Tokyo In the key, add a red line indicating AFTN and blue line indicating AMHS Change the colour of the line connecting RODB Brisbane and RODB Nadi to blue	To reflect the current status of connections between RODBs
Page 9	Replace outdated Chart CNS 1 with text "AFTN plan to be inserted here"	Chart CNS 1 to be addressed by e-ANP CNS Development Working Group (e-ANP), 08 – 10 April 2015
Page 10, Par. 5.1 to 5.2.4	Replace "AFTN" with "AFTN or AMHS"	To reflect the transitional state of AMHS implementation
Page 10, par. 5.4.1	"Amendment 75 to Annex 3, paragraph 11.1.9 allows the use of the Internet for non-time critical OPMET information"	Remove redundant reference to Am. 75
Page 12, par.	Replace "AFTN" with "AFTN or AMHS"	To reflect the transitional state of

Section/page	Amendment	Notes/reasoning
6.1.7		AMHS implementation
Page 16, par. 7.1.3	Replace "AFTN" with "AFTN or AMHS"	To reflect the transitional state of AMHS implementation
Page 16, par. 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. In accordance with Annex 3 [6.2.2], TAF shall be issued not earlier than one hour prior to the beginning of its validity period. 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 e.g., 15 minutes before the filing/transmission times specified in Appendix B".	Realign with Amendment 76 to Annex 3 Realign with paragraph 7.3.3
Page 17, par. 7.3.4	"The filing time for 24- and 30-hour TAF bulletins should be one hour before the start of the validity period In accordance with Annex 3 [Appendix 10, 2.1.2], TAF [bulletins] should be filed for transmission [by ROBEX centres] not earlier than one hour prior to the beginning of their validity period The filing/transmission times specified in **Appendix B** ensure the OPMET information is available to the users twenty five (25) minutes prior to the beginning of the TAF validity period"	Realign with Amendment 76 to Annex 3 and ensure 25 minutes lead time between transmission of TAF bulletin and beginning of TAF validity period.
Page 18, par. 7.4.1.2	In the table; headings of 3rd and 5th columns: "Filing time (not prior to)"	Realign with Amendment 76 to Annex 3
Page 19, par. 7.5.1	In the table; 2nd column, replace "ROBEX Centre via AFTN" with " ROBEX Centre via AFTN or AMHS"	Realign with Amendment 76 to Annex 3
Page 20, par. 7.5.1	In the table 'TAF issuance, compiling and filing'; 3rd column 'Explanation of Time': "State determines time of the beginning of the validity period for four (4) scheduled TAFs (emphasis on consistency, i.e. 00, 06, 12, 18Z every day) Note that issuance time of TAF (which is not earlier than one hour beforeprior to the startbeginning of its validity period of validity of the TAF) is used in the date/time group (DTG) (YYGGggZ) of TAF messages TAF is sent to ROBEX Centre before the cutoff time of accepting TAF for filing one hour before the start period of validity timeas indicated in Appendix B (typically 15 minutes before filing)" … "TAF should be filed for transmission at leastnot earlier than one hour beforeprior to the commencementbeginning of their validity period of validity, unless otherwise determined by regional air navigation agreement"	Realign with Amendment 76 to Annex 3 Realign with paragraph 7.2.1
Page 25 to 26, par. 11.3 to 11.4	Replace "AFTN" with "AFTN or AMHS"	To reflect the transitional state of AMHS implementation
Page 27, par. 12.1.3	Replace "AFTN" with "AFTN or AMHS"	To reflect the transitional state of AMHS implementation

Section/page	Amendment	Notes/reasoning
Page 28, par. 12.3.1.2	Replace "AFTN" with "AFTN or AMHS"	To reflect the transitional state of AMHS implementation
Appendix A, page A-2	Under ROBEX Centre Bangkok VTBB, delete details for locations VVTS, VVNB, VVDN and VVPB from METAR Bulletin SAAE31 and add new METAR Bulletin SAAE33 (including details for locations VVTS, VVNB, VVDN, VVPB, VVCR, VVCT, VVPQ)	Details of new bulletin provided in ROBEX WG/12 – WP/14 (18/03/14)
Appendix A, page A-5	Under ROBEX Centre Colombo VCCC, METAR Bulletin SASB31, add details for location VCRI	Realign with FASID Table MET 1A (Amendment APAC 13/11 – MET)
Appendix A, page A-9	Under ROBEX Centre Tokyo RJTD, METAR Bulletin SASJP38, add details for location RJFS SAGA	As advised by Japan to reflect current service provided (note: RJFS is not listed in AOP tables)
Appendix A, page A-9	Under ROBEX Centre Wellington, METAR Bulletin SANZ31, add Bul. Time HH + 30	Realign with current requirement for half-hourly routine observations issued as METAR in New Zealand
Appendix B, pages B-2 to B-11	Under all TAF bulletins, change the filing time (in the 6th column of the table) to correspond to the time 25 minutes prior to the start of validity (in the 7th column of the table)	Realign with Amendment 76 to Annex 3 (i.e., filing time of TAF bulletins by ROBEX centres should allow for compilation of TAF which shall be issued not earlier than one hour prior to the beginning of its validity period) and ensure TAF bulletins are available to users at least 25 minutes prior to the commencement of the validity period
Appendix B, pages B-2 to B-3	Under ROBEX Centre Bangkok VTBB, delete location details for VVTS, VVNB, VVDN and VVPB from TAF Bulletin FTAE32 and add new TAF Bulletin FTAE34 (including details for locations VVTS, VVNB, VVDN, VVPB, VVCR, VVCT, VVPQ)	Details of new bulletin provided in ROBEX WG/12 – WP/14 (18/03/14)
Appendix B, page B-2	Under ROBEX Centre Bangkok VTBB, TAF Bulletin FTAE33, change the start of validity to 0600, 1200 and 0000	As advised by RODB Bangkok
Appendix B, page B-3	Under ROBEX Centre Bangkok VTBB, TAF Bulletin FTTH31, add details for location VTPH	As advised by RODB Bangkok
Appendix B, page B-3	Under ROBEX Centre Bangkok VTBB, TAF Bulletin FTTH33, add details for location VTBO	As advised by RODB Bangkok
Appendix B, page B-4 to	Under ROBEX Centre Brisbane YBBN, TAF Bulletin FTAU32, add details for locations YBRM, YPXM, YPCC, YMHB, YMLT, YSNF, YPPD, YBRK, YWLM, YCFS, YLHI,	As proposed by Australia in ROBEX WG/13 – IP/5

Section/page	Amendment	Notes/reasoning
B-5	and delete details for location YGEL	
Appendix B, page B-5	Under ROBEX Centre Brisbane YBBN, TAF Bulletin FTAU33, delete details for locations YBRM, YPXM, YPCC, YMHB, YMLT, YSNF, YPPD, YBRK, YWLM, YCFS and add details for location YGEL and YAMB	As proposed by Australia in ROBEX WG/13 – IP/5
Appendix B, page B-5	Under ROBEX Centre Brisbane YBBN, TAF Bulletin FTAU34, delete details for locations YAMB, YPKU, YPGV and delete the note "*1200 TAF is not issued"	As proposed by Australia in ROBEX WG/13 – IP/5
Appendix B, page B-5	Under ROBEX Centre Brisbane YBBN, TAF Bulletin FTAU35, add details for locations YPKU, YPGV and change TAF validity for YCIN and YFRT to 12	As proposed by Australia in ROBEX WG/13 – IP/5
Appendix B, page B-6	Under TAF Bulletin FTNG31, delete the note "*doc 7910 is expected to be updated from AUUU to ANYN"	Remove redundant information
Appendix B, page B-7	Under ROBEX Centre Mumbai VABB, TAF Bulletin FTIN32, add details for location VCRI	Realign with FASID Table MET 1A (Amendment APAC 13/11 – MET)
Appendix B, page B-8 to B-9	Under ROBEX Centre Tokyo RJTD, TAF Bulletins FTJP31, FTJP32 and FTJP38, change the TAF validity for all locations to 30 hours	As advised by Japan to reflect current service provided
Appendix B, page B-9	Under ROBEX Centre Tokyo RJTD, TAF Bulletin FTJP38, add details for location RJFS SAGA	As advised by Japan to reflect current service provided (note: RJFS is not listed in AOP tables)
Appendix C, page C-2	In the header information: "~~AOP~~ Aerodromes listed in Table AOP 1"	Realign with official terminology
Appendix C, page C-2	Under AUSTRALIA, change FT bulletin for YPXM, YPCC, YMHB, YSNF, YPPD and YBRK to FTAU32 YBBN	Realign with Appendix B changes (As proposed by Australia in ROBEX WG/13 – IP/5)
Appendix C, page C-7	Under SRI LANKA, add details for location VCRI	Realign with FASID Table MET 1A (Amendment APAC 13/11 – MET)
Appendix C, page C-9	Under VIET NAM, Column 4, replace SAAE31 with SAAE33, and Column 5, replace FTAE32 with FTAE34	Details of new bulletins provided in ROBEX WG/12 – WP/14 (18/03/14)
Appendix C, page C-9	In the header information: "Additional ~~non -AOP~~ Aerodromes not listed in Table AOP 1"	Realign with official terminology
Appendix C, page C-9	Under AUSTRALIA: Change FT bulletin for YBRM, YCFS, YMLT and YWLM to FTAU32 YBBN; Change FT bulletin for YAMB to FTAU33 YBBN; Change FT bulletin for YCIN, YFRT, YPGV and YPKU to FTAU35 YBBN; and Add "*LORD HOWE ISLAND,* YLHI, FTAU32 YBBN"	Realign with Appendix B changes (As proposed by Australia in ROBEX WG/13 – IP/5)

Section/page	Amendment	Notes/reasoning
Appendix C, page C-11	Under Thailand, next to *PRACHUAP KHIRI KHAN/Huan Hin*, add details for the bulletin: FTTH31 VTBB; next to *TRAT/Khao Sming*, add details for the bulletin: FTTH33 VTBB; and fill in the name UDON THANI next to location indicator VTUDS	As advised by Thailand
Appendix H, page H-4, par. 1.1.5	In the table; 2nd row: "SIGMET for TS, CB, TURB, ICE, MTW, DS, and SS and RDOACT CLD …"	Realign with Annex 3 requirements (Appendix 6, 1.1.4)
Appendix H, pages H-6 to H-10	Under 2.1.1, *(i) Compliance Index*, *(ii) Availability Index* and *(iii) Regularity Index*, add the additional explanatory information and guidance provided by Thailand.	Additional information extracted from ROBEX WG/12 – Flimsy 1 (17/03/14)
Appendix I, page I-2	Change ROBEX focal point details for Japan: "Mr. Yuichi Yamakoshi Mr. Jun Ryuzaki … email: y.yamakoshi@met.kishou.go.jp jryuzaki@met.kishou.go.jp"	As advised by Japan
Appendix I, page I-4	Change ROBEX focal point details for Republic of Korea: "Mr. Lee Seung-ju Ms. Park Jieun Assistant Director Senior Meteorologist … Information and Technology Support Observation and Forecast Division … Tel:+82 (32) 74028 4020, Fax:+82 (32) 74028 4707, e-mail: cavok75@korea.kr jieuni@korea.kr" "Ms. Kim Youn-jeong … Information and Technology Support Division …" "*Administration units OPMET/ROBEX,* Aviation Meteorological Office, 2172-1, Woonseo-dong, Joong-gu, Incheon 400-340 Korea Aviation Meteorological Agency (KAMA), 272 Gonghang-ro, Jung-gu, Incheon, 400720 (P.O. Box 43) (Location Indicator : RKSIYPYX)"	As advised by Republic of Korea

INTERNATIONAL CIVIL AVIATION ORGANIZATION

ROBEX HANDBOOK

Twelfth Edition ― 2004
(Amended – <mark>March 2015</mark>)

Prepared by the ICAO Asia and Pacific Office
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ROBEX Handbook   i

RECORD OF AMENDMENTS AND CORRIGENDA

Amendments					Corrigenda			
No.	Date of issue	Date entered	Entered by		No.	Date of issue	Date entered	Entered by
1	30.01.2007	24.04.2007	Regional Office					
2	05.11.2008	05.11.2008	Regional Office					
3	15.12.2008	15.12.2008	Regional Office					
4	25.06.2009	25.06.2009	Regional Office					
5	30.09.2009	30.09.2009	Regional Office					
6	07.06.2010	07.06.2010	Regional Office					
7	25.08.2010	25.08.2010	Regional Office					
8	27.04.2011	27.04.2011	Regional Office					
9	24.01.2013	24.01.2013	Regional Office					
10	07.02.2013	07.02.2013	Regional Office					
11	01.08.2013	16.05.2013	Regional Office					
12	XXX	XXX	Regional Office					

Twelfth Edition   **2004**
Am. 03/2015

ROBEX Handbook ii

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Twelfth Edition **2004**
<mark>**Am. 03/2015**</mark>

ROBEX Handbook   iii

TABLE OF CONTENTS

Page

Twelfth Edition   **2004**
<mark>Am. 03/2015</mark>

ROBEX Handbook   iii

List of Appendices:

Glossary of Abbreviations/Acronyms

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
FTP	File Transfer Protocol
HF	High Frequency
ICD	Interface Control Document
IROG	Inter-regional OPMET gateway
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
OPMET/M TF	OPMET Management Task Force (renamed ROBEX WG from 2013)
PAC	Pacific Region

ROBEX Handbook v

PIRG	Planning and Implementation Regional Group
ROBEX	Regional OPMET Bulletin Exchange
ROBEX WG	ROBEX Working Group (formerly OPMET/M TF)
RODB	Regional OPMET data banks
SADIS	Satellite distribution system for information relating to air navigation
SADISOPSG	SADIS Operations Group
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
VSAT	Very small aperture terminal
WAFC	World Area Forecast Centre
WAFS	World Area Forecast System
WIFS	WAFS Internet File Service
WMO	World Meteorology Organization

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 and/or 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 ROBEX Working Group (formerly the OPMET Management Task Force, established by APANPIRG/13 and renamed by CNS/MET SG/16) 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.

ROBEX Handbook   4

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	SA
	SPECI	SP
Aerodrome forecasts	TAF: 12 to 30 hour	FT
	9 hour	FC
SIGMET information	SIGMET	WS
	SIGMET for TC	WC
	SIGMET for VA	WV
Volcanic ash and tropical cyclone advisories	Volcanic Ash Advisory	FV
	Tropical Cyclone Advisory	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. The ASIA/PAC Regional Air Navigation Plan does not include any requirement for 9-hour validity aerodrome forecasts in TAF code (9H) classified as FC 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 or AMHS).

3.3.3   ***Exchange of OPMET information through the satellite segment of the AFS and the associated Internet systems***

3.3.3.1   The satellite broadcast provided by the United Kingdom (SADIS) and the Internet systems provided by the United Kingdom (Secure SADIS FTP) and the United States (WIFS) 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/Secure SADIS FTP and WIFS service providers for uplink or distribution through SADIS/Secure SADIS FTP and WIFS.

3.3.4   ***Other OPMET exchanges***

3.3.4.1   Where OPMET exchanges described in the above paragraphs are not sufficient, direct AFTN or AMHS 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 or AMHS. 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/Secure SADIS FTP and WIFS satellite and Internet broadcasts.*** The RODBs and IROGs should facilitate the global exchange of OPMET data carried out through the SADIS/Secure SADIS FTP and WIFS satellite and Internet broadcasts. In order to achieve this, close liaison should be maintained between the IROGs and the corresponding SADIS/Secure SADIS FTP and WIFS gateways. Availability of ASIA/PAC and MID data on SADIS/Secure SADIS FTP and WIFS 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
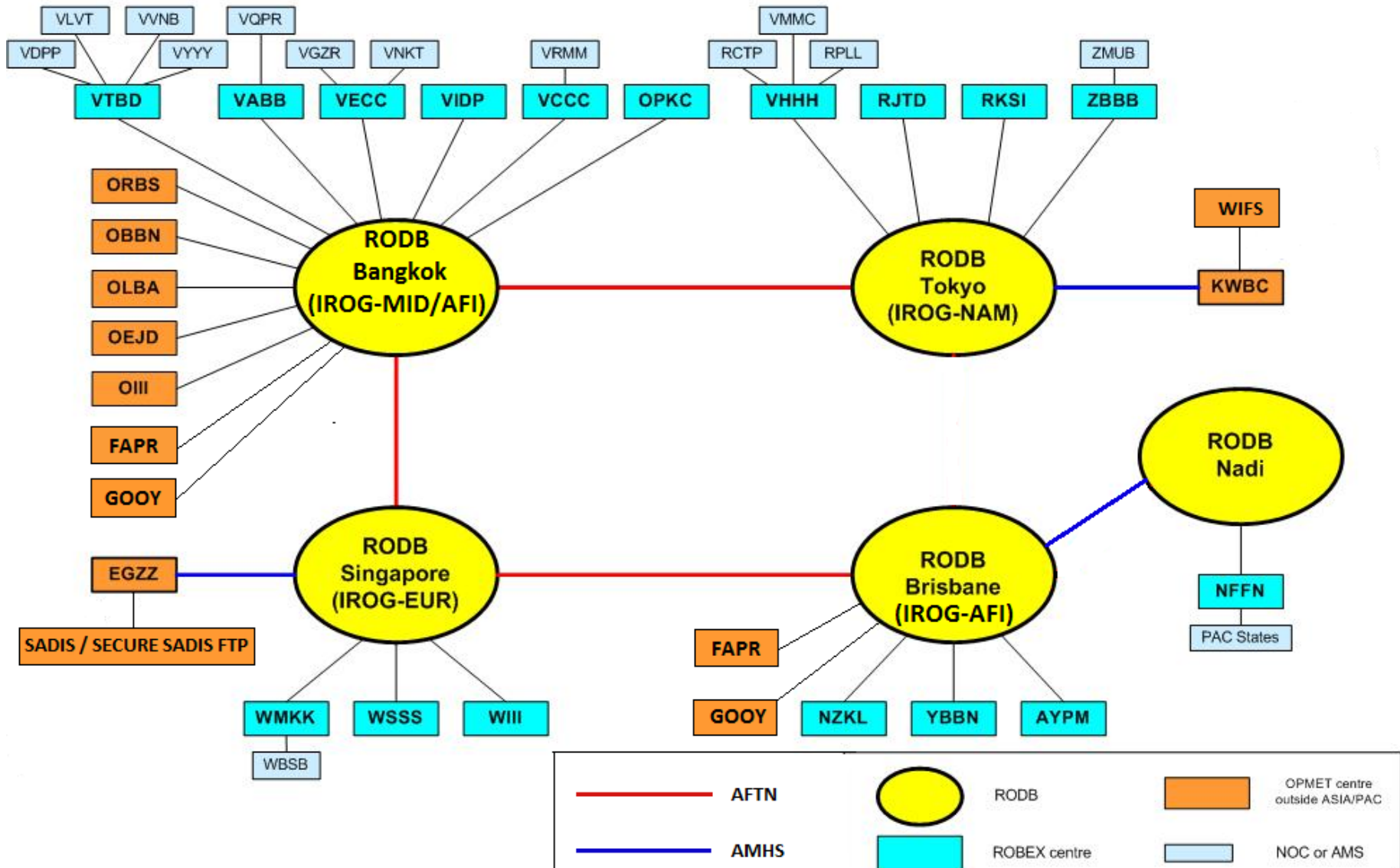
AFTN plan to be inserted here

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 or AMHS circuits; and
-           use of satellite distribution systems – SADIS broadcasts.

5.2   Use of AFTN or AMHS

5.2.1   In the ROBEX scheme AFTN or AMHS 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 or AMHS.

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

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

5.2.4   OPMET bulletins transmitted via AFTN or AMHS 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

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

5.3.2   The list of authorized users of the SADIS satellite broadcasts in the ASIA/PAC regions and location of the operational VSATs are available from the SADISOPSG website: www.icao.int/safety/meteorology/sadisopsg/Pages/default.aspx   (click: "Operational Information" then "Status of implementation of SADIS").

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, Part VI MET, paragraphs 32, 33 and 34, allows for the retrieval of WAFCs forecasts using Secure SADIS FTP or WIFS.

ROBEX Handbook   11

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.

ROBEX Handbook   12

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 or AMHS 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.

ROBEX Handbook   13

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

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

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.

ROBEX Handbook   15

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

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

Twelfth Edition   **2004**
Am. 03/2015

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 and Internet distribution systems SADIS/Secure SADIS FTP and WIFS.*
>
> 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 or AMHS 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**. In accordance with Annex 3 [6.2.2], TAF shall be issued not earlier than one hour prior to the beginning of its validity period. 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 e.g., 15 minutes before the filing/transmission times specified in **Appendix B**.

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~~In accordance with Annex 3 [Appendix 10, 2.1.2], TAF [bulletins] should be filed for transmission [by ROBEX centres] not earlier than one hour prior to the beginning of their validity period. The filing/transmission times specified in **Appendix B** ensure the OPMET information is available to the users twenty five (25) minutes prior to the beginning of the TAF 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 (not prior to)	Period of validity	Filing time (not prior to)
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
AFTN header	
Priority Indicator and Address	GG YBBBYPYX
Date and Time of filing and Originator	271104 ZBBBYPYX
WMO Abbreviated Heading	FTCI31 ZBBB 271100
TAF messages	TAF ZBAA 271100Z 2712/2812..…= TAF ZBTJ 271100Z 2712/2818…….= …..
AFTN Normal Ending	NNNN

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) **Examples : HH+00, HH+30, HH+10, HH+50** 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 or AMHS*	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)

Twelfth Edition   **2004**
Am. 03/2015

ROBEX Handbook 20

TAF issuance, compiling and filing

Function	Responsible Entity	Explanation of Time	Time of task (min)
TAF Issuance	AMO or NOC	State determines time of the beginning of the validity period for four (4) scheduled TAFs (emphasis on consistency, i.e. 00, 06, 12, 18Z every day) Note that issuance time of TAF (which is not earlier than one hour ~~before~~prior to the ~~start~~beginning of its validity ~~period of validity of the TAF~~) is used in the date/time group (DTG) (YYGGggZ) of TAF messages TAF is sent to ROBEX Centre before the cutoff time of accepting TAF for filing ~~one hour before the start period of validity time~~as indicated in Appendix B (typically 15 minutes before filing).	(allow enough time to reach ROBEX Centre before cutoff time)
Bulletin compiling and filing	ROBEX Centre	Bulletins are compiled during the 15 minutes before filing Note that the TAF issuance time (official filing time) is used in the DTG – YYGGgg of the bulletin header 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 TAF should be filed for transmission ~~at least~~not earlier than one hour ~~before~~prior to the ~~commencement~~beginning of their validity period ~~of validity~~, unless otherwise determined by regional air navigation agreement. (ref.: Annex 3, App. 10, 2.1.2)	<15
Send TAF bulletin to: ROBEX Centres (predefined distribution list) RODBs NOCs Other MET offices	ROBEX Centre *via AFTN or AMHS*	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 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)

               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 or redistribution through SADIS/Secure SADIS FTP and WIFS. 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)

8.7   VAA and TCA messages should be distributed to other ICAO regions and made available for uplink or redistribution through SADIS/Secure SADIS FTP and WIFS. This distribution should be carried out either directly by the VAACs and TCACs or through the relevant IROGs.

ROBEX Handbook   22

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 RKSIYPYX VTBBYPYX
            WSZZWWBX YBBBYPYX YPDNYMYX ZJSYYMYX
            090726 WSSSYMYX
            UASR71 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:

RODB	AFTN ADDRESS	ROBEX CENTRES IN THE AREA OF RESPONSIBILITY
Bangkok	VTBBYZYX	Bangkok/VTBB Colombo/VCCC Delhi/VIDP Karachi/OPKC Kolkata/VECC Mumbai/VABB Baghdad/ORBS Bahrain/OBBN Beirut/OLBA Jeddah/OEJD Tehran/OIII
Brisbane	YBBBYZYX	Brisbane/YBBN Port Moresby/AYPM Wellington/NZKL
Nadi	NFFNYZYX	Nadi/NFFN
Singapore	WSSSYZYX	Jakarta/WIII Kuala Lumpur/WMKK Singapore/WSSS
Tokyo	RJTDYZYX	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.

ROBEX Handbook   25

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 or AMHS 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 or AMHS 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.

ROBEX Handbook   26

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 or AMHS 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 or AMHS 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:

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

12.2.2   Quality Control – general requirements

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

ROBEX Handbook 28

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   <u>Quality Control Procedures</u>

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   <u>Monitoring of Scheduled OPMET data</u>

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 or AMHS 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).

ROBEX Handbook   29

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
ASIA/PAC REGION							
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	WSZZYPYM
			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	WSZZYPYM
			VLSK	SAVANNAKHET		TOKYO	RJTDYPYX
				all SA in bulletin for 2300-1400 UT			
				to be implemented 1 June 2011			
		SAAE33	VVTS	HO CHI MINH/Tan Son Nhat	HH + 00	**BANGKOK**	VTBBYPYX
			VVNB	HA NOI/Noi Bai		BRISBANE	YBBBYPYX
			VVDN	DA NANG		SINGAPORE	WSZZYPYM
			VVPB	HUE/Phu Bai		TOKYO	RJTDYPYX
			VVCR	KHANH HOA/Cam Ranh Int'l		Kolkata	VECCYPYX
			VVCT	CAN THO/Can Tho Int'l		Collombo	VCCCYPYX
			VVPQ	KIEN GIANG/Phu Quoc Int'l		Delhi	VIDPYPYX
						Hong Kong	VHZZYPYX
						Jakata	WIZZMCMC
						Kuala Lumpur	WMZZYPYR
						Mumbai	VABYPYX
						Incheon	RKSIYPYX
		SATH31	*VTCH*	*MAE HONG SON**	HH + 00	**BANGKOK**	VTBBYPYX
			VTCL	*LAMPANG****		BRISBANE	YBBBYPYX
			VTCN	*NAN**		SINGAPORE	WSZZYPYM
			VTCP	*PHRAE**		TOKYO	RJTDYPYX
			VTCT	CHIANG RAI/Chiang Rai Intl Airport**			
			VTPH	*PRACHUAP KHIRI KHAN/Hua Hin**			
			VTPO	*SUKHOTHAI***			

1		2			3	4	
ROBEX Centre		**METAR Bulletin**			**Bul. Time**	**DISSEMINATION TO**	
Name	**CCCC**	**BUL No.**	**CCCC**	**Aerodrome**		**RODB/ROBEX C.**	**AFTN Address**
			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	WSZZYPYM
			VTSG	KRABI**		TOKYO	RJTDYPYX
			VTSH	*SONGKHLA**			
			VTSM	*SURAT THANI/Samui**			
			VTSR	*RANONG***			
			VTST	*TRANG**			
			*Available 0000-1100				
			**Available 2300-1400				
			***on request				
		SATH33	VTBO	*TRAT/Khao Sming**	HH + 00	**BANGKOK**	VTBBYPYX
			VTUD	*UDON THANI**		BRISBANE	YBBBYPYX
			VTUI	*SAKON NAKHON/Ban Khai***		SINGAPORE	WSZZYPYM
			VTUK	KHON KAEN**		TOKYO	RJTDYPYX
			VTUL	*LOEI***			
			VTUO	*BURI RAM***			
			VTUQ	*NAKHON RATCHASIMA**			
			VTUU	UBON RATCHATHANI			
			VTUV	*ROI ET***			
			VTUW	*NAKHON PHANOM**			
			*Available 0000-1100				
			**Available 2300-1400				
			***on request				
		SATH41	VTPB	*PHETCHABUN*	HH + 00	**BANGKOK**	VTBBYPYX
			VTPM	*TAK/Mae Sot*		BRISBANE	YBBBYPYX
			VTSE	*CHUMPHON/Tab Gai*		SINGAPORE	WSZZYPYM
			VTSK	*PATTANI*		TOKYO	RJTDYPYX
			VTUJ	*SURIN*			
				all aerodromes in bulletin avail on request			
Beijing	**ZBBB**	SACI31	ZBAA	BEIJING/Capital	HH + 00	BANGKOK	VTBBYPYX
			ZBSJ	*SHIJIAZHUANG/Zhengding*	HH + 30	BRISBANE	YBBBYPYX
			ZBTJ	TIANJIN/Binhai		SINGAPORE	WSZZYPYM
			ZBYN	TAIYUAN/Wusu		**TOKYO**	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	ZMUBYMYX
			ZYTL	DALIAN/Zhoushuizi			
			ZYTX	SHENYANG/Taoxian			
		SACI32	ZGKL	GUILIN/Liangjiang	HH + 00	BANGKOK	VTBBYPYX
			ZGNN	NANNING/Wuxu		BRISBANE	YBBBYPYX

1		2			3	4	
ROBEX Centre		**METAR Bulletin**			**Bul. Time**	**DISSEMINATION TO**	
Name	**CCCC**	**BUL No.**	**CCCC**	**Aerodrome**		**RODB/ROBEX C.**	**AFTN Address**
			ZGOW	*SHANTOU/Waisha*		SINGAPORE	WSZZYPYM
			ZGSZ	SHENZHEN/Baoan		**TOKYO**	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
			ZSNB	*NINGBO/Lishe*			
			ZSQD	QINGDAO/Liuting			
			ZUUU	CHENGDU/Shuangliu			
		SACI41	ZBHH	HOHHOT/Baita	HH + 00	BANGKOK	VTBBYPYX
			ZGHA	CHANGSHA/Huanghua		BRISBANE	YBBBYPYX
			ZHCC	*ZHENGZHOU/Xinzheng*		SINGAPORE	WSZZYPYM
			ZHHH	WUHAN/Tianhe		**TOKYO**	RJTDYPYX
			ZJHK	*HAIKOU/Meilan*		Hong Kong	VHZZYPYX
			ZJSY	SANYA/Phoenix		Jakarta	WIZZMZBB
			ZLLL	LANZHOU/Zhongchuan		Karachi	OPZZYPYX
			ZSNJ	NANJING/Lukou		Mumbai	VABBYPYX
			ZSOF	HEFEI/Luogang		Incheon	RKSIYPYX
			ZUCK	CHONGQING/Jiangbei		Ulaanbaatar	ZMUBYMYX
			ZYCC	*CHANGCHUN/Longjia*		Wellington	NZZZYPYX
			ZYHB	HARBIN/Taiping			
Brisbane	**YBBN**	SAAU31	YSSY	SYDNEY/Sydney (Kingsford Smith) Intl	HH + 00	BANGKOK	VTBBYPYX
			YMML	MELBOURNE/Melbourne Intl	HH + 30	**BRISBANE**	YBBBYPYX
			YBBN	BRISBANE/Brisbane Intl		NADI	NFFNYPYX
			YPAD	ADELAIDE/Adelaide Intl		SINGAPORE	WSZZYPYM
			YPDN	DARWIN/Darwin Intl		TOKYO	RJTDYPYX
			YPPH	PERTH/Perth int		Hong Kong	VHZZYPYX
			YBCS	CAIRNS/Cairns Intl		Incheon	RKSIYPYX
			YBAS	ALICE SPRINGS		Jakarta	WIZZMIMI
			YBTL	TOWNSVILLE/Townsville Intl		Wellington	NZZZYPYX
			YPCC	COCOS (KEELING) ISLAND Intl			
			YPXM	CHRISTMAS ISLAND			
			YPTN	TINDAL			
			YPKU	*KUNUNURRA*			
			YBCG	*GOLD COAST*			
			YHID	*HORN ISLAND*			
			YPJT	*PERTH/Jandakot*			
			YSTW	*TAMWORTH*			
			YCFS	*COFFS HARBOUR*			
			YSCB	*CANBERRA*			
		SAAU32	*YSCB*	*CANBERRA/Canberra*	HH + 00	BANGKOK	VTBBYPYX
		SAAU32	*YMAV*	*AVALON*	HH + 00	BANGKOK	VTBBYPYX
			YBRK	ROCKHAMPTON	HH + 30	**BRISBANE**	YBBBYPYX
			YPKG	*KALGOORLIE-BOULDER*		NADI	NFFNYPYX
			YPPD	PORT HEDLAND		SINGAPORE	WSZZYPYM
			YBRM	*BROOME/Broome Intl*		TOKYO	RJTDYPYX
			YSNF	NORFOLK ISLAND Intl		Hong Kong	VHZZYPYX

1		2			3	4	
ROBEX Centre		METAR Bulletin			Bul. Time	DISSEMINATION TO	
Name	CCCC	BUL No.	CCCC	Aerodrome		RODB/ROBEX C.	AFTN Address
			YSDU	*DUBBO*		Incheon	RKSIYPYX
			YSRI	*RICHMOND, NSW*		Jakarta	WIZZMIMI
			YWLM	*WILLIAMTOWN*		Port Moresby	AYPYYMYX
			YMLT	*LAUNCESTON*		Wellington	NZZZYPYX
			YMHB	*HOBART*			
			YPEA	*PEARCE*			
			YCIN	*CURTIN*			
			YFRT	*FORREST*			
			YPGV	*GOVE*			
			YAMB	*AMBERLEY*			
			YBHM	*HAMILTON ISLAND*			
			YBMA	*MOUNT ISA*			
			YPWR	*WOOMERA*			
			YGEL	*GERALDTON*			
		SANG31	AYPY	PORT MORESBY Intl	HH+00	BANGKOK	VTBBYPYX
			AYWK	*WEWAK**		**BRISBANE**	YBBBYPYX
			AYVN	VANIMO*		NADI	NFFNYPYX
			AYNZ	NADZAB*		SINGAPORE	WSZZYPYM
			AYMH	*MOUNT HAGEN**		TOKYO	RJTDYPYX
			AYGN	*GURNEY**		Beijing	ZBBBYPYX
			AYMO	*MOMOTE**		Hong Kong	VHZZYPYX
			AGGH	HONIARA (HENDERSON)		Jakarta	WIZZMIMI
						Port Moresby	AYPYYMYX
				*NIL report		Wellington	NZZZYPYX
Colombo	VCCC	SASB31	VCBI	BANDARANAIKE INTERNATIONAL AIRPORT COLOMBO	HH + 10	**BANGKOK**	VTBBYPYX
			VRMM	MALE/Intl		BRISBANE	YBBBYPYX
			VCRI	MATTALA RAJAPAKSA		SINGAPORE	WSZZYPYM
						Hong Kong	VHZZYPYX
						Kuala Lumpur	WMZZYPYR
						Mumbai	VABBYPYX
Delhi	VIDP	SAIN32	VIDP	DELHI/Indira Gandhi Intl	HH + 00	**BANGKOK**	VTBBYPYX
			VILK	LUCKNOW	HH + 30	BRISBANE	YBBBYPYX
			VIAR	AMRITSAR		SINGAPORE	WSZZYPYM
			VIBN	VARANASI		TOKYO	RJTDYPYX
			VIJP	JAIPUR		Kolkata	VECCYPYX
						Hong Kong	VHZZYPYX
						Karachi	OPZZYPYX
						Mumbai	VABBYPYX
Hong Kong	VHHH	SAHK31	VHHH	HONG KONG/International	HH + 00	BANGKOK	VTBBYPYX
			RCTP	TAIBEI CITY/Taibei Intl Ap	HH + 30**	BRISBANE	YBBBYPYX
			RCKH	GAOXIONG		SINGAPORE	WSZZYPYM
			RCSS	TABEI/Songshan		**TOKYO**	RJTDYPYX
			VMMC	MACAU/Intl Airport		Beijing	ZBBBYPYX
			RPLL	MANILA/Ninoy Aquino Intl, Pasay City, Metro Manila		Guangzhou	ZGGGYPYX

1		2			3	4	
ROBEX Centre		METAR Bulletin			Bul. Time	DISSEMINATION TO	
Name	CCCC	BUL No.	CCCC	Aerodrome		RODB/ROBEX C.	AFTN Address
			RPVM	LAPU-LAPU/Mactan, Cebu		Kuala Lumpur	WMZZYPYR
			RPMD	DAVAO/Francisco Bangoy Intl, Davao Del Sur*		Incheon	RKSIYPYX
			RPLB	SUBIC BAY, Subic Bay Intl, Olongapo City, Zambales		Wellington	NZZZYPYX
			RPLI	LAOAG, Laoag Intl, Ilocos Norte*			
			RPMZ	ZAMBOANGA, Zamboanga Intl, Zamboanga Del Norte*			
		*Available 2200 - 1000 **SAHK31 HH+30 bulletins contain VHHH, RCTP, RCKH, RCSS, VMMC except RCKH and 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		**TOKYO**	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			WSZZYPYM
			WIII	JAKARTA/Soekarno Hatta (COMM CENTER)		SINGAPORE 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			
			WIMG	PADANG/TABING			
			WIOO	PONTIANAK/Supadio			
			WIPP	PALEMBANG/Sultan Mahmud Badaruddin II			
			WAOO	BANJARMASIN/Syamsuddin Noor			
			WALL	BALIK PAPAN/Sepinggan			
			WADL	*PRAYA/LOMBOK INTERNATIONAL*			
		SAID33	WABP	TIMIKA/Moses Kilangin	HH + 00 HH + 30		
			WAJJ	JAYAPURA/Sentani			
			WAKK	MERAUKE/Mopah			

1		2			3	4	
ROBEX Centre		**METAR Bulletin**			**Bul. Time**	**DISSEMINATION TO**	
Name	**CCCC**	**BUL No.**	**CCCC**	**Aerodrome**		**RODB/ROBEX C.**	**AFTN Address**
			WAPP	AMBON/Pattimura			
			WARS	*SEMARANG/A.Yani*			
			WICT	*BANDAR LAMPUNG/Radin Inten*			
			WATT	KUPANG/El Tari			
			WALR	TARAKAN/Juwata			
Kolkata	**VECC**	**SAIN33**	VECC	NETAJI SUBHASH CHANDRA BOSE INTERNATIONAL AIRPORT. KOLKATA	HH + 50	**BANGKOK**	VTBBYPYX
			VEPT	PATNA		**BRISBANE**	YBBBYPYX
			VGHS	HAZRAT SHAHJALAL INTERNATIONAL AIRPORT		SINGAPORE	WSZZYPYM
			VGEG	M.A. HANNAN INTL. CHITTAGONG		TOKYO	RJTDYPYX
			VNKT	KATHMANDU		Colombo	VCCCYPYX
			VQPR	PARO/Intl.		Delhi	VIDPYPYX
						Hong Kong	VHZZYPYX
						Karachi	OPZZYPYX
						Mumbai	VABBYPYX
Karachi	**OPKC**	**SAPK31**	OPKC	KARACHI/Jinnah Int'l	HH + 00	**BANGKOK**	VTBBYPYX
			OPRN	ISLAMABAD/Chaklala	HH + 30	BRISBANE	YBBBYPYX
			OPLA	LAHORE/Allama Iqbal Int'l		SINGAPORE	WSZZYPYM
			OPNH	NAWABSHAH		TOKYO	RJTDYPYX
			OPGD	GWADAR		Abu Dhabi	OMZZYPYX
			OPPS	PESHAWAR		Bahrain	OBZZYPYX
			OPSK	*SUKKUR (not in 7910)*		Beijing	ZBBBYPYX
						Kolkata	VECCYPYX
						Delhi	VIDDYPYX
						Hong Kong	VHZZYPYX
						Mumbai	VABBYPYX
						Tehran	OIZZYPYX
Kuala Lumpur	**WMKK**	**SAMS31**	WBGG	KUCHING/Intl	HH + 00	BANGKOK	VTBBYPYX
			WBKK	KOTA KINABALU/Intl	HH + 30	BRISBANE	YBBBYPYX
			WBSB	BRUNEI/Intl		**SINGAPORE**	WSZZYPYM
			WMKK	SEPANG/KL International Airport		TOKYO	RJTDYPYX
			WMKP	PENANG/Intl		Colombo	VCCCYPYX
			WSSS	SINGAPORE/Changi		Hong Kong	VHZZYPYX
			WSSL	SELETAR		Jakarta	WIZZMBMB
						Manila	RPLLYPYX
		SAMS38	*WBGB*	*BINTULU*	HH + 00	Mumbai	VABBYPYX
			WBGR	*MIRI*		Incheon	RKSIYPYX
			WBGS	*SIBU*		Wellington	NZZZYPYX
			WBKL	*LABUAN*			
			WBKS	*SANDAKAN*			
			WBKW	*TAWAU*			
			WMKD	*KUANTAN*			
			WMKL	PULAU LANGKAWI/Intl			

1		2			3	4	
ROBEX Centre		**METAR Bulletin**			**Bul. Time**	**DISSEMINATION TO**	
Name	**CCCC**	**BUL No.**	**CCCC**	**Aerodrome**		**RODB/ROBEX C.**	**AFTN Address**
			WMKM	*MALACCA*			
Mumbai	**VABB**	**SAIN31**	VAAH	AHMEDABAD	HH + 10	**BANGKOK**	VTBBYPYX
			VABB	MUMBAI/Chhatrapati Shivaji Intl.	HH + 40	BRISBANE	YBBBYPYX
			VANP^*	NAGPUR		SINGAPORE	WSZZYPYM
			*VOHY^**	*HYDERABAD*			
						TOKYO	RJTDYPYX
			VOMM	CHENNAI		Abu Dhabi	OMZZYPYX
			VOTR	TIRUCHCHIRAPPALLI		Bahrain	OBZZYPYX
			VOTV^*	TRIVANDRUM		Colombo	VCCCYPYX
			VOHS	HYDERABAD		Delhi	VIDPYPYX
						Hong Kong	VHZZYPYX
			^HH+40			Karachi	OPZZYPYX
			*available 0040 - 2340			Kolkata	VECCYPYX
			**available 0040-1540			Tehran	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	WSZZYPYM
			NIUE	NIUE Intl		TOKYO	RJTDYPYX
			PLCH	CHRISTMAS ISLAND		Port Moresby	AYPYYMYX
			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.			
			NFTL	*HA'APAI*			
			NFTV	VAVA'U			
			NLWW	WALLIS HIHIFO			
			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	WSZZYPYM
			RJBB	KANSAI Intl		**TOKYO**	RJTDYPYX
			RJGG	CHUBU CENTRAIR Intl		Beijing	ZBBBYPYX
						Guam	PGUMCOAX
		SAJP32	RJCC	SAPPORO/New Chitose		Hong Kong	VHZZYPYX
			RJFF	FUKUOKA		Incheon	RKSIYPYX
			RJFK	KAGOSHIMA		London	EGZZMASI
			RJCH	HAKODATE		Wellington	NZZZYPYX
			RJFU	NAGASAKI			
			RJOA	HIROSHIMA			
			RJFT	KUMAMOTO			
			RJSN	NIIGATA			
			RJFO	OITA			

1		2			3	4	
ROBEX Centre		**METAR Bulletin**			**Bul. Time**	**DISSEMINATION TO**	
Name	**CCCC**	**BUL No.**	**CCCC**	**Aerodrome**		**RODB/ROBEX C.**	**AFTN Address**
			RJOB	OKAYAMA			
			RJSS	SENDAI			
			RJOT	TAKAMATSU			
		SAJP38	*RJCK*	*KUSHIRO*	HH + 00	BANGKOK	VTBBYPYX
			RJCM	*MEMANBETSU*		BRISBANE	YBBBYPYX
			RJCB	*OBIHIRO*		NADI	NFFNYPYX
			RJOC	*IZUMO*		SINGAPORE	WSZZYPYM
			RJOH	*MIHO*		**TOKYO**	RJTDYPYX
			RJOK	*KOCHI*		Beijing	ZBBBYPYX
			RJFM	*MIYAZAKI*		Brasilia	SBBRYZYX
			ROIG	*ISHIGAKI JIMA*		Hong Kong	VHZZYPYX
			RJNK	*KANAZAWA/Komatsu*		Incheon	RKSIYPYX
			RJNS	*SHIZUOKA*		London	EGZZMASI
			RJNT	*TOYAMA*		Rayong	VTBUYMYX
			RJSA	*AOMORI*			
			RJSF	*FUKUSHIMA*			
			RJOM	*MATSUYAMA*			
			RJEC	*ASAHIKAWA*			
			RJSK	*AKITA*			
			RJAH	*HYAKURI*			
			RJFR	*NEW KITAKYUSHU*			
			RJFS	*SAGA*			
Wellington	**NZKL**	**SANZ31**	NZWN	WELLINGTON Intl	HH + 00	BANGKOK	VTBBYPYX
			NZAA	AUCKLAND Intl	HH + 30	**BRISBANE**	YBBBYPYX
			NZCH	CHRISTCHURCH Intl		SINGAPORE	WSZZYPYM
						TOKYO	RJTDYPYX
						NADI	NFFNYPYX
						Beijing	ZBBBYPYX
						Hong Kong	VHZZYPYX
						Incheon	RKSIYPYX
						Jakarta	WIZZYPYX
						Port Moresby	AYPYYMYX
MID REGION							
Bahrain	**OBBI**	**SABN31**	OBBI	BAHRAIN/Bahrain Intl	HH +00	**BANGKOK**	VTBBYPYX
			OEDF	DAMMAM/King Fahd International		BRISBANE	YBBBYPYX
			OEDR	DHAHRAN/King Abdul Aziz Air Base		SINGAPORE	WSZZYPYM
			OTBD	DOHA INTERNATIONAL		TOKYO	RJTDYPYX
			OKBK	KUWAIT/Intl Airport		Abu Dhabi	OMAMYMYX
						Baghdad	ORBSYPYX
						Beirut	OLLLYPYX
						Hong Kong	VHZZYPYX
						Jeddah	OEZZYPYX
						Karachi	OPZZYPYX
						Mumbai	VABBYPYX
						Tehran	OIZZYPYX
						Wellington	NZZZYPYX

1		2			3	4	
ROBEX Centre		**METAR Bulletin**			**Bul. Time**	**DISSEMINATION TO**	
Name	**CCCC**	**BUL No.**	**CCCC**	**Aerodrome**		**RODB/ROBEX C.**	**AFTN Address**
		SABN32	OMAA	ABU DHABI INTERNATIONAL	HH + 00	**BANGKOK**	VTBBYPYX
			OMAD	ABU DHABI BATEEN		BRISBANE	YBBBYPYX
			OMAL	AL AIN		SINGAPORE	WSZZYPYM
			OMDB	DUBAI INTERNATIONAL		TOKYO	RJTDYPYX
			OMDW	AL MAKTOUM/Intl		Abu Dhabi	OMAMYMYX
			OMFJ	FUJAIRAH INTERNATIONAL		Baghdad	ORBSYPYX
			OMRK	RAS AL KHAIMAH INTERNATIONAL		Beirut	OLLLYPYX
			OMSJ	SHARJAH INTERNATIONAL		Hong Kong	VHZZYPYX
			OOMS	MUSCAT/Muscat Intl		Jeddah	OEZZYPYX
			OOSA	SALALAH		Karachi	OPZZYPYX
						Mumbai	VABBYPYX
						Tehran	OIZZYPYX
						Wellington	NZZZYPYX
Beirut	OLBA	SAME31	OLBA	BEIRUT/Beirut Intl	HH + 00	**BANGKOK**	VTBBYPYX
			OSDI	DAMASCUS/Intl		BRISBANE	YBBBYPYX
			OJAM	AMMAN/Marka		SINGAPORE	WSZZYPYM
			OJAI	AMMAN/Qeen Alia		TOKYO	RJTDYPYX
			OSAP	ALEPPO/Intl		Abu Dhabi	OMZZYPYX
						Baghdad	ORBSYMYX
			OSLK	BASSEL AL-ASSAD/Intl. Lattakia		Bahrain	OBZZYPYX
			OJAQ	AQABA/King Hussein International Airport		Jeddah	OEJDYPYX
Jeddah	OEJD	SASD31	OEDF	DAMMAM/King Fahd International	HH + 00	**BANGKOK**	VTBBYPYX
			OEDR	DHAHRAN/King Abdul Aziz Air Base		BRISBANE	YBBBYPYX
			OEJN	JEDDAH/King AbdulAziz Intl		SINGAPORE	WSZZYPYM
			OEMA	MADINAH/Prince Mohammad Bin AbdulAziz Intl		TOKYO	RJTDYPYX
			OERK	RIYADH/King Khaled Intl		Abu Dhabi	OMZZYPYX
			OYSN	SANAA/Intl		Baghdad	ORBBYMYX
			OYAA	ADEN/Intl		Bahrain	OBZZYPYX
						Beirut	OLLLYPYX
						Hong Kong	VHZZYPYX
Tehran	OIII	SAIR31	OIII	THERAN/Mehrabad Intl	HH + 00 HH + 30*	**BANGKOK**	VTBBYPYX
			OIFM	ESFAHAN/Shahid Behesti Intl		BRISBANE	YBBBYPYX
			OISS	SHIRAZ/Shahid Dastghaib Intl		SINGAPORE	WSZZYPYM
			OIZH	ZAHEDAN/Intl		TOKYO	RJTDYPYX
			OIKB	BANDAR ABBAS/Intl		Abu Dhabi	OMZZYPYX
			OIMM	MASHHAD/Shahid Hashemi Nejad Intl		Baghdad	ORBSYMYX
			OIAW	AHWAZ		Bahrain	OBZZYPYX
			OIKK	KERMAN		Beirut	OLLLYPYX
			OITT	TABRIZ/Intl		Delhi	VIDPYPYX
			*available 0330-1130			Karachi	OPZZYPYX
						Mumbai	VABBYPYX
						Hong Kong	VHZZYPYX

1		2			3	4	
ROBEX Centre		METAR Bulletin			Bul. Time	DISSEMINATION TO	
Name	CCCC	BUL No.	CCCC	Aerodrome		RODB/ROBEX C.	AFTN Address
		SAIR32	OIIE	TEHRAN/Imam Khomaini Intl	HH + 00	**BANGKOK**	VTBBYPYX
			OITR	UROMIYEH	HH + 30	BRISBANE	YBBBYPYX
			OIAA	ABADAN		SINGAPORE	WSZZYPYM
			OICC	KERMANSHAH/Shahid Ashrafi Esfahani		TOKYO	RJTDYPYX
			OIGG	RASHT/Sardar-E-Jangal		Abu Dhabi	OMZZYPYX
			OIBK	KISH ISLAND/Kish		Baghdad	ORBSYMYX
			OIYY	YAZD/Shahid Sadooghi		Bahrain	OBZZYPYX
			OAKN	KANDAHAR		Beirut	OLLLYPYX
			OAKB	KABUL AD		Delhi	VIDPYPYX
						Karachi	OPZZYPYX
						Mumbai	VABBYPYX
		SAIR33	OIBB	BUSHEHR	HH + 00	**BANGKOK**	VTBBYPYX
			OIBL	BANDAR LENGHEN		BRISBANE	YBBBYPYX
			OIBP	PERSIAN GULF		SINGAPORE	WSZZYPYM
			OICK	KHORAM ABAD		TOKYO	RJTDYPYX
			OICS	SANANDAJ		Abu Dhabi	OMZZYPYX
			OIHH	HAMADAN		Baghdad	ORBSYMYX
			OINZ	SARI/Dasht-E-Naz		Bahrain	OBZZYPYX
			OITL	ARDABIL		Beirut	OLLLYPYX
			OIZC	CHAH BAHAR/Konrak		Delhi	VIDPYPYX
			OISR	LAMERD		Karachi	OPZZYPYX
						Mumbai	VABBYPYX
		SAIR34	OIAG	AGHAJARI	HH + 00	**BANGKOK**	VTBBYPYX
							YBBBYPYX
			OIAM	BANDAR MAHSHAHR/Mahshahr		BRISBANE	
			OICI	ILAM		SINGAPORE	WSZZYPYM
			OIKQ	MINAB		TOKYO	RJTDYPYX
			OINN	NOSHAHR		Abu Dhabi	OMZZYPYX
			OINR	RAMSAR		Baghdad	ORBSYMYX
			OISL	LAR		Bahrain	OBZZYPYX
			OISY	YASOUJ		Beirut	OLLLYPYX
			OITZ	ZANJAN		Delhi	VIDPYPYX
						Karachi	OPZZYPYX
						Mumbai	VABBYPYX
		SAIR35	OIAD	DEZFUL	HH + 00	**BANGKOK**	VTBBYPYX
			OIBJ	JAM		BRISBANE	YBBBYPYX
			OIBS	SIRRI ISLAND/Sirri		SINGAPORE	WSZZYPYM
			OIHR	ARAK		TOKYO	RJTDYPYX
			OIKM	BAM		Abu Dhabi	OMZZYPYX
			OIKR	RAFSSANJAN		Baghdad	ORBSYMYX
			OING	GORGAN		Bahrain	OBZZYPYX
			OIZB	ZABOL		Beirut	OLLLYPYX
			OIZI	IRAN SHAHR		Delhi	VIDPYPYX
						Karachi	OPZZYPYX
						Mumbai	VABBYPYX
		SAIR36	OIBA	ABUMUSA ISLAND/Abumusa	HH + 00	**BANGKOK**	VTBBYPYX

1		2			3	4	
ROBEX Centre		**METAR Bulletin**			Bul. Time	**DISSEMINATION TO**	
Name	**CCCC**	**BUL No.**	**CCCC**	**Aerodrome**		**RODB/ROBEX C.**	**AFTN Address**
			OIBV	LAVAN ISLAND/Lavan		BRISBANE	YBBBYPYX
			OIFS	SHAHRE KORD		SINGAPORE	WSZZYPYM
			OIIP	KARAJ/Payam		TOKYO	RJTDYPYX
			OIMB	BIRJAND		Abu Dhabi	OMZZYPYX
			OIMN	BOJNORD		Baghdad	ORBSYMYX
			OIMS	SABZEVAR		Bahrain	OBZZYPYX
			OIMT	TABAS		Beirut	OLLLYPYX
			OIZJ	JASK		Delhi	VIDPYPYX
						Karachi	OPZZYPYX
						Mumbai	VABBYPYX
		SAIR37	OIBQ	KHARK ISLAND/Khark	HH + 00	**BANGKOK**	VTBBYPYX
			OIIK	GHAZVIN		BRISBANE	YBBBYPYX
			OIMC	SARAKHS		SINGAPORE	WSZZYPYM
			OIMD	GOONABAD		TOKYO	RJTDYPYX
			OIMQ	KASHMAR		Abu Dhabi	OMZZYPYX
			OITK	KHOY		Baghdad	ORBSYMYX
			OITM	MARAGHEH/Sahand		Bahrain	OBZZYPYX
			OINE	KAKAKEH		Beirut	OLLLYPYX
			OIBL	BANDAR LENGHEN		Delhi	VIDPYPYX
						Karachi	OPZZYPYX
						Mumbai	VABBYPYX
Cairo	**HECA**	SAEG31	HECA	CAIRO	HH+00 HH + 30	**BANGKOK**	VTBBYPYX
						BRISBANE	YBBBYPYX
						SINGAPORE	WSZZYPYM
						TOKYO	RJTDYPYX
		SAEG32	HEBL	ABU SIMBEL	HH+00	**BANGKOK**	VTBBYPYX
			HEAX	ALEXANDRIA/Intl		BRISBANE	YBBBYPYX
			HEMM	MERSA MATRUH		SINGAPORE	WSZZYPYM
			HEPS	PORT SAID/Intl		TOKYO	RJTDYPYX
			HELX	LUXOR/Intl			
			HESN	SHARM EL SHEIKH/Intl			
			HEGN	HURGHADA/Intl			
			HESH	SHARM EL SHEIKH/Intl			
			HEBA	BORG EL ARAB/Intl			
			HEMA	MARAS /ALAM/Intl			
			HETB	TABA/Intl			
			HESC	ST CATHERINE/Intl			
			HEAR	EL ARISH/Intl			
			HEAT	ASYUT/Intl			

ROBEX Handbook   *B-1*

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	0535		24	Abu Dhabi	OMZZYPYX
			VTSP	PHUKET/Phuket Intl	1135		30	Bahrain	OBZZYPYX
			VTCT	CHIANG RAI/Chiang Rai Intl Apt	1735		30	Beijing	ZBBBYPYX
			VTSG	KRABI	2335		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~~	0535		~~24~~	Bahrain	OBZZYPYX
			VYYY	YANGON INTERNATIONAL	1135		24	Beijing	ZBBBYPYX
			VYMD	*MANDALAY INTERNATIONAL* *	1735		24	Beirut	OLLLYPYX
			VGHS	HAZRAT SHAHJALAL INTL APT	2335		30	Hong Kong	VHZZYPYX
			~~VVPB~~	~~HUE/Phu Bai~~			~~24~~	Jeddah	OEJDYPYX
				*Issued 0500/1100				Karachi	OPZZYPYX
								Kuala Lumpur	WMZZYPYR
								Mumbai	VABBYPYX
								Incheon	RKSIYPYX
								Tehran	OIIIYPYX
								Wellington	NZZZYPYA
		FTAE33	*VLLB*	*LUANG PRABANG*	0535	0600	18	**BANGKOK**	VTBBYPYX
			VLLN	*LUANG NAMTHA*	1135	1200	18	BRISBANE	YBBBYPYX
			VLPS	*PAKSE*	2335	0000	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
		FTAE34	VVTS	HO CHI MINH/Tan Son Nhat	0535	0600	30	**BANGKOK**	VTBBYPYX
			VVNB	HA NOI/Noi Bai	1135	1200	24	BRISBANE	YBBBYPYX
			VVDN	DA NANG	1735	1800	24	SINGAPORE	WSZZYPYX
			VVPB	HUE/Phu Bai	2335	0000	24	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**

Name	CCCC	Bul No.	CCCC	Aerodrome	Filing time	Start of validity	TAF validity	RODB/ROBEX Centre	AFTN address
			VVCR	KHANH HOA/Cam Ranh Int'l			24	Abu Dhabi	OMZZYPYX
			VVCT	CAN THO/Can Tho Int'l			24	Bahrain	OBZZYPYX
			VVPQ	KIEN GIANG/Phu Quoc Int'l			24	Beijing	ZBBBYPYX
								Beirut	OLLLYPYX
								Hong Kong	VHZZYPYX
								Jeddah	OEJDYPYX
								Karachi	OPZZYPYX
								Kuala Lumpur	WMZZYPYR
								Mumbai	VABBYPYX
								Incheon	RKSIYPYX
								Tehran	OIIIYPYX
								Wellington	NZZYPYA
		FTTH31	VTCL	LAMPANG	~~0500~~	0600	24	**BANGKOK**	VTBBYPYX
			VTCN	NAN	~~1700~~	1800	24	BRISBANE	YBBBYPYX
			VTCP	PHRAE	0535		24	SINGAPORE	WSZZYPYX
			VTCH	MAE HONG SON	1735		24	TOKYO	RJTDYPYX
			VTPM	TAK/MAE SOT	*Note: issued twice per day*		24		
			VTPP	PHITSANULOK			24		
			VTPT	TAK			24		
			VTPO	SUKHOTHAI			24		
			VTPB	PHETCHABUN			24		
			VTPH	PRACHUAP KHIRI KHAN/Hua Hin			24		
		FTTH32	VTSB	SURAT THANI	~~0500~~	0600	24	**BANGKOK**	VTBBYPYX
			VTSM	SURAT THANI/Samui	~~1700~~	1800	24	BRISBANE	YBBBYPYX
			VTSC	NARATHIWAT	0535		24	SINGAPORE	WSZZYPYX
			VTSK	PATTANI	1735		24	TOKYO	RJTDYPYX
			VTST	TRANG	*Note: issued twice per day*		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	~~1700~~	1800	24	SINGAPORE	WSZZYPYX
			VTUL	LOEI	~~2300~~	0000	24	TOKYO	RJTDYPYX
			VTUO	BURI RAM	0535		24		
			VTUW	NAKHON PHANOM	1135		24		
			VTUQ	NAKHON RATCHASIMA	1735		24		
			VTUV	ROI ET	2335		24		
			VTUJ	SURIN			24		
			VTBO	TRAT/Khao Sming			24		
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	**TOKYO**	RJTDYPYX
			ZGGG	GUANGZHOU/Baiyun	0535		24 (30)*	Hong Kong	VHZZYPYX
			ZSHC	HANGZHOU/Xiaoshan	1135		24	Karachi	OPZZYPYX
			ZSPD	SHANGHAI/Pu Dong	1735		24 (30)*	Mumbai	VABBYPYX
			ZSSS	SHANGHAI/Hongqiao	2335		24*	Incheon	RKSIYPYX
			ZWSH	KASHI/Kashi			24 (30)	Ulan Bator	ZMUBYMYX
			ZWWW	URUMQI/Diwopu			24 (30)	Wellington	NZZZYPYA
			ZYTL	DALIAN/Zhoushuizi			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
			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)	TOKYO	RJTDYPYX
			ZLXY	XI'AN/Xianyang	0535		24	Hong Kong	VHZZYPYX
			ZMUB	ULAANBAATAR	1135		30	Jakarta	WIZZYPYX
			ZPPP	KUNMING/Wujiaba	1735		24 (30)	Karachi	OPZZYPYX
			ZSAM	XIAMEN/Gaoqi	2335		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	1700	1800	24	SINGAPORE	WSZZYPYX
			ZHHH	WUHAN/Tianhe	2300	0000	24	TOKYO	RJTDYPYX
			ZJHK	HAIKOU/Meilan	0535		24 (30)	Hong Kong	VHZZYPYX
			ZJSY	SANYA/Phoenix	1135		24	Jakarta	WIZZYPYX
			ZLLL	LANZHOU/Zhongchuan	1735		24	Karachi	OPZZYPYX
			ZSNJ	NANJING/Lukou	2335		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	BRISBANE	YBBBYPYX
			YPDN	DARWIN/Darwin Intl	1700	1800	30	NADI	NFZZRFXX
			YMML	MELBOURNE/Melbourne Intl	2300	0000	30	SINGAPORE	WSZZYPYX
			YPPH	PERTH/Perth Intl	0535		30	TOKYO	RJTDYPYX
			YSSY	SYDNEY/Sydney (Kingsford Smith) In	1135		30	Beijing	ZBBBYPYX
					1735			Hong Kong	VHZZYPYX
					2335			Jakarta	WIZZYPYX
								Manila	RPLLYPYX
								Mumbai	VABBYPYX
								Port Moresby	AYPMYMYX
								Wellington	NZZZYPYX
		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	0535		24	TOKYO	RJTDYPYX
			YPLM	LEARMONTH	1135		24	Beijing	ZBBBYPYX
			YPTN	TINDAL	1735		24	Hong Kong	VHZZYPYX
			YBTL	TOWNSVILLE/Townsville Intl	2335		24	Jakarta	WIZZYPYX
			YBCG	GOLD COAST			24	Manila	RPLLYPYX
			YGEL	GERALDTON			24	Mumbai	VABBYPYX
			YBRM	BROOME/Broome Intl			24	Port Moresby	AYPMYMYX
			YPXM	CHRISTMAS ISLAND			24	Wellington	NZZZYPYX
			YPCC	COCOS (KEELING) ISLAND Intl			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
			YMHB	HOBART			24		
			YMLT	*LAUNCESTON*			*24*		
			YSNF	NORFOLK ISLAND Intl			24		
			YPPD	PORT HEDLAND			24		
			YBRK	ROCKHAMPTON			24		
			YWLM	*WILLIAMTOWN*			*24*		
			YCFS	*COFFS HARBOUR*			*24*		
			YLHI	*LORD HOWE ISLAND*			*24*		
		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*	0535		18	TOKYO	RJTDYPYX
			YMHB	*HOBART*	1135		*18 (24)*	Beijing	ZBBBYPYX
			YMLT	*LAUNCESTON*	1735		*18*	Hong Kong	VHZZYPYX
			YSNF	*NORFOLK ISLAND Intl*	2335		*18 (24)*	Jakarta	WIZZYPYX
			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*		
			YGEL	*GERALDTON*			18		
			YAMB	*AMBERLEY*			18		
		FTAU34	*YAMB*	*AMBERLEY*	*0500*	0600	*18*	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*	0535		*12*	TOKYO	RJTDYPYX
					1135			Beijing	ZBBBYPYX
				1200 TAF is not issued	1735			Hong Kong	VHZZYPYX
					2335			Jakarta	WIZZYPYX
								Manila	RPLLYPYX
								Mumbai	VABBYPYX
								Port Moresby	AYPMYMYX
								Wellington	NZZZYPYX
		FTAU35	YCIN	*CURTIN*	*0100*	0200	12	BANGKOK	VTBBYPYX
			YFRT	*FORREST*	*0700*	0800	12	**BRISBANE**	YBBBYPYX
			YPKU	*KUNUNURRA*	*1300*	1400	12	NADI	NFZZRFXX
			YPGV	*GOVE*	*1900*	2000	12	SINGAPORE	WSZZYPYX
					0135			TOKYO	RJTDYPYX
					0735			Beijing	ZBBBYPYX
					1335			Hong Kong	VHZZYPYX
					1935			Jakarta	WIZZYPYX
								Manila	RPLLYPYX
								Mumbai	VABBYPYX
								Port Moresby	AYPMYMYX
								Wellington	NZZZYPYX
		FTTM31	WPDL	*DILI/Presidente Nicolau Lobato Intl*	*0100*	0200	12	BANGKOK	VTBBYPYX
					0700	0800		**BRISBANE**	YBBBYPYX
					1300	1400		NADI	NFZZRFXX

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**
					~~1900~~	2000		SINGAPORE	WSZZYPYX
					0135			TOKYO	RJTDYPYX
					0735			Beijing	ZBBBYPYX
					1335			Hong Kong	VHZZYPYX
					1935			Jakarta	WIZZYPYX
								Manila	RPLLYPYX
								Mumbai	VABBYPYX
								Port Moresby	AYPMYMYX
								Wellington	NZZZYPYX
		FTNG31	AYPY	PORT MORESBY Intl	~~0400~~	0600	24	BANGKOK	VTBBYPYX
			ANYN*	NAURU I.	~~1000~~	1200	24	**BRISBANE**	YBBBYPYX
			AGGH	HONIARA (HENDERSON)	~~1600~~	1800	24	NADI	NFZZRFXX
					~~2200~~	0000		SINGAPORE	WSZZYPYX
					0535			TOKYO	RJTDYPYX
				doc 7910 is expected to be updated from AUUU to ANYN	1135			Beijing	ZBBBYPYX
					1735			Hong Kong	VHZZYPYX
					2335			Jakarta	WIZZYPYX
								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	0535		30	Abu Dhabi	OMZZYPYX
			RPLL	MANILA/Ninoy Aquino Intl, Pasay City, Metro Manila	1135		30	Bahrain	OBZZYPYX
			RPVM	LAPU-LAPU/Mactan, Cebu	1735		30	Beijing	ZBBBYPYX
			RPMD	DAVAO/Francisco Bangoy Intl, Davao Del Sur	2335		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	30	**TOKYO**	RJTDYPYX
			RKTU	CHEONGJU Intl	0535		30	Hong Kong	VHZZYPYX
			RKNY	YANGYANG Intl	1135		30	Karachi	OPZZYPYX
			RKTN	DAEGU INTL	1735		30	Wellington	NZZZYPYX
			RKJB	MUAN Intl	2335		30		
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	0535		30	Abu Dhabi	OMZZYPYX

1		2					3	
ROBEX Centre		**TAF Bulletin**					**Dissemination**	
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Name	**CCCC**	**Bul No.**	**CCCC**	**Aerodrome**	**Filing time**	**Start of validity**	**TAF validity**	**RODB/ROBEX Centre**	**AFTN address**
			OPGD	GWADAR	1135		24	Bahrain	OBZZYPYX
			OPSK	SUKKAR	1735		24	Beijing	ZBBBYPYX
					2335			Beirut	OLLLYPYX
								Hong Kong	VHZZYPYX
								Jeddah	OEJDYPYX
								Karachi	OPZZYPYX
								Tehran	OIIIYPYX
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	0535		30	Abu Dhabi	OMZZYPYX
			VIAR	AMRITSAR	1135		30	Bahrain	OBZZYPYX
			VIBN	VARANASI	1735		30	Beijing	ZBBBYPYX
			VIDP	DELHI/Indira Gandhi Intl	2335		30	Beirut	OLLLYPYX
			VIJP	JAIPUR			30	Hong Kong	VHZZYPYX
			VILK	LUCKNOW			30	Jeddah	OEJDYPYX
		FTIN32	VCBI	BANDARANAIKE INTERNATIONAL A	~~0300~~	0600	30	Karachi	OPZZYPYX
			VCRI	MATTALA RAJAPAKSA INTERNATIO	~~0900~~	1200	30	Tehran	OIIIYPYX
			VNKT	KATHMANDU	~~1500~~	1800	24		
			VOCI	COCHIN INTERNATIONAL AIRPORT	~~2100~~	0000	30		
			VOCL	CALICUT	0535		30		
			VOHY	*HYDERABAD*	1135		30		
			VOMM	CHENNAI			30		
					1735				
			VOTR	TIRUCHCHIRAPPALLI	2335		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**	NFZZRFXX
			NGTA	TARAWA/Bonriki Intl	0535		24	TOKYO	RJTDYPYX
			NIUE	NIUE Intl	1135		24	Hong Kong	VHZZYPYX
			NVSS	SANTO/Pekoa	1735		24	Wellington	NZZZYPYA
			NVVV	PORT VILA/Bauerfield	2335		24		
			PLCH	CHRISTMAS ISLAND			24		
			NSTU	PAGO PAGO Intl, Tutuila I.			24		
			NFNA	*NAUSOR/Intl*			24		
			NTAA	TAHITI FAAA			30		
			NWWW	NOUMEA LA TANTOUTA			24		
			NSFA	FALEOLO/Intl			24		
			NLWW	WALLIS HIHIFO			24		
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	**SINGAPORE**	WSZZYPYX
			WAAA	UJUNG PANDANG/Hasanuddin (Comm Center)	~~2300~~	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**
			WABB	BIAK/Frans Kaisiepo	0535		30	NADI	NFZZRFXX
			WADD	BALI/Ngurah Rai	1135		24 (30)	Abu Dhabi	OMZZYPYX
			WARR	SURABAYA/Juanda	1735		24	Bahrain	OBZZYPYX
			WIHH	JAKARTA/Halimperdana Kusuma	2335		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	OIIIYPYX
								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	**SINGAPORE**	WSZZYPYX
			WMKM	*MALACCA*	2300	0000	24	TOKYO	RJTDYPYX
			WMKP	PENANG/Intl	0535		24	Beirut	OLLLYPYX
			WMSA	*SUBANG/Sultan Abdul Aziz Shah*	1135		24 (30)	Hong Kong	VHZZYPYX
					1735			Manila	RPLLYMYX
					2335			Mumbai	VABBYPYX
								Wellington	NZZZYPYX
		FTSR33	WBSB	BRUNEI/Intl	0500	0600	30		
			WBGB	*BINTULU*	1100	1200	24		
			WBGG	KUCHING/Intl	1700	1800	24		
			WBGR	*MIRI*	2300	0000	24		
			WBGS	*SIBU*	0535		24		
			WBKK	KOTA KINABALU/Intl	1135		24		
			WBKL	*LABUAN (RMAF)*	1735		24		
			WBKS	*SANDAKAN*	2335		24		
			WBKW	*TAWAU*			24		
Tokyo	RJTD	FTJP31	RJAA	NARITA Intl	0200	0300	30	BANGKOK	VTBBYPYX
			RJBB	KANSAI Intl	0800	0900	30	BRISBANE	YBBBYPYX
			RJTT	TOKYO Intl	1400	1500	30	NADI	NFZZRFXX
			RJOO	OSAKA Intl	2000	2100	30	SINGAPORE	WSZZYPYX
			ROAH	NAHA	0235		30	**TOKYO**	RJTDYPYX
			RJCH	HAKODATE	0835		30	Beijing	ZBBBYPYX
			RJSS	SENDAI	1435		30	Beirut	OLLLYPYX
					2035			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

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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**
								Wellington	NZZZYPYA
		FTJP32	RJFF	FUKUOKA/Fukuoka	~~0200~~	0300	30	BANGKOK	VTBBYPYX
			RJGG	CHUBU CENTRAIR INTL	~~0800~~	0900	30	BRISBANE	YBBBYPYX
			RJCC	SAPPORO/New Chitose	~~1400~~	1500	30	NADI	NFZZRFXX
			RJFK	KAGOSHIMA	~~2000~~	2100	30	SINGAPORE	WSZZYPYX
			RJSN	NIIGATA	0235		30	**TOKYO**	RJTDYPYX
			RJFU	NAGASAKI	0835		30	Beijing	ZBBBYPYX
			RJFT	KUMAMOTO	1435		30	Beirut	OLLLYPYX
			RJOA	HIROSHIMA	2035		30	Brasilia	SBBRYZYX
			RJOB	OKAYAMA			30	Colombo	VCBIYMYX
			RJOT	TAKAMATSU			30	Guam	PGUMCOAX
			RJFO	OITA			30	Hong Kong	VHZZYPYX
			RJNT	*TOYAMA*			30	Incheon	RKSIYPYX
			RJNK	*KANAZAWA/Komatsu*			30	Karachi	OPZZYPYX
								London	EGZZMASI
								Mumbai	VABBYPYX
								Noumea	NWCCYMYX
								Saipan	PGSNYMYX
								Washington	KWBCYMYX
								Wellington	NZZZYPYA
		FTJP38	*RJSA*	*AOMORI*	~~0200~~	0300	30	BANGKOK	VTBBYPYX
			RJSF	*FUKUSHIMA*	~~0800~~	0900	30	BRISBANE	YBBBYPYX
			RJSK	*AKITA*	~~1400~~	1500	30	NADI	NFZZRFXX
			RJOM	*MATSUYAMA*	~~2000~~	2100	30	SINGAPORE	WSZZYPYX
			RJNS	*SHIZUOKA*	0235		30	**TOKYO**	RJTDYPYX
			RJEC	*ASAHIKAWA (civil)*	0835		30	Beijing	ZBBBYPYX
			RJAH	*HYAKURI*	1435		30	Incheon	RKSIYPYX
			RJCM	*MEMANBETSU*	2035		30		
			RJCK	*KUSHIRO*			30		
			RJCB	*OBIHIRO*			30		
			RJOC	*IZUMO*			30		
			RJOH	*MIHO*			30		
			RJOK	*KOCHI*			30		
			RJFM	*MIYAZAKI*			30		
			ROIG	*ISHIGAKI JIMA*			30		
			RJFR	*NEW KITAKYUSHU*			30		
			RJFS	*SAGA*			30		
Wellington	**NZKL**	**FTNZ31**	NZWN	WELLINGTON Intl	~~0500~~	0600	24	BANGKOK	VTBBYPYX
			NZAA	AUCKLAND Intl	~~1100~~	1200	24	**BRISBANE**	YBBBYPYX
			NZCH	CHRISTCHURCH Intl	~~1700~~	1800	24	NADI	NFZZRFXX
					~~2300~~	0000		SINGAPORE	WSZZYPYX
					0535			TOKYO	RJTDYPYX
					1135			Beijing	ZBBBYPYX
					1735			Port Moresby	AYPMYMYX
					2335			Hong Kong	VHZZYPYX

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1		2					3	
Bahrain	**OBBI**	**FTBN31**	OBBI	BAHRAIN INTERNATIONAL	~~0500~~	0600	30	**BANGKOK**	VTBBYPYX
			OEDR	DHAHRAN/King AbdulAziz Air Base	~~1100~~	1200	30	BRISBANE	YBBBYPYX

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**
			OTBD	DOHA INTERNATIONAL	~~1700~~	1800	30	SINGAPORE	WSZZYPYX
			OKBK	KUWAIT/Intl Airport	~~2300~~	0000	30	TOKYO	RJTDYPYX
			OEDF	DAMMAM/King Fahd International	0535		30	Baghdad	ORBSYMYX
					1135			Beijing	ZBBBYPYX
					1735			Beirut	OLLLYPYX
					2335			Hong Kong	VHZZYPYX
								Jeddah	OEJDYPYX
								Karachi	OPZZYPYX
								Mumbai	VABBYPYX
								Incheon	RKSIYPYX
								Tehran	OIIIYPYX
								Wellington	NZZZYPYX
		FTBN32	OMAA	ABU DHABI INTERNATIONAL	~~0500~~	0600	30	**BANGKOK**	VTBBYPYX
			OMDB	DUBAI INTERNATIONAL	~~1100~~	1200	30	BRISBANE	YBBBYPYX
			OMSJ	SHARJAH INTERNATIOAL	~~1700~~	1800	30	SINGAPORE	WSZZYPYX
			OOMS	MUSCAT/Muscat Intl	~~2300~~	0000	30	TOKYO	RJTDYPYX
			OMRK	RAS AL KHAIMAH INTERNATIONAL	0535		30	Baghdad	ORBSYMYS
			OMFJ	FUJAIRAH INTERNATIONAL	1135		30	Beijing	ZBBBYPYX
			OOSA	SALALAH	1735		30	Beirut	OLLLYPYX
			OMAL	AL AIN	2335		30	Hong Kong	VHZZYPYX
			OMAD	*ABU DHABI BATEEN (mil)*			30	Jeddah	OEJDYPYX
			OMDW	AL MAKTOUM/Intl				Karachi	OPZZYPYX
								Mumbai	VABBYPYX
								Incheon	RKSIYPYX
								Tehran	OIIIYPYX
								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	0535		30	Abu Dhabi	OMZZYPYX
			OJAM	AMMAN/Marka	1135		30	Bahrain	OBZZYPYX
			OJAQ	AQABA/King Hussein Intl	1735		30	Jeddah	OEJDYPYX
					2335			Karachi	OPZZYPYX
								Mumbai	VABBYPYX
								Tehran	OIIIYPYX
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	0535		30	Abu Dhabi	OMZZYPYX
			OEDF	DAMMAM/King Fahd Intl	1135		30	Bahrain	OBZZYPYX
					1735			Beirut	OLLLYPYX
					2335			Hong Kong	VHZZYPYX
								Karachi	OPZZYPYX

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**
								Mumbai	VABBYPYX
								Tehran	OIIIYPYX
Tehran	OIII	FTIR31	OIII	TEHRAN/Mehrabad Intl	~~0500~~	0600	30	**BANGKOK**	VTBBYPYX
			OIFM	ESFAHAN/Shahid Behesti Intl	~~1100~~	1200	30	BRISBANE	YBBBYPYX
			OISS	SHIRAZ/Shahid Dastghaib Intl	~~1700~~	1800	30	SINGAPORE	WSZZYPYX
			OIZH	ZAHEDAN/Intl	~~2300~~	0000	30	TOKYO	RJTDYPYX
			OIKB	BANDAR ABBAS/Intl	0535		30	Abu Dhabi	OMZZYPYX
			OIMM	MASHHAD/Shahid Hashemi Nejad Intl	1135		30	Bahrain	OBZZYPYX
			OIAW	AHWAZ	1735		30	Beijing	ZBBBYPYX
			OIKK	KERMAN	2335		30	Beirut	OLLLYPYX
			OITT	TABRIZ/Intl			30	Jeddah	OEJDYPYX
								Karachi	OPZZYPYX
								Mumbai	VABBYPYX
		FTIR32	OIAA	ABADAN	~~0500~~	0600	30	**BANGKOK**	VTBBYPYX
			OIIE	TEHRAN/Imam Khomaini Intl	~~1100~~	1200	30	BRISBANE	YBBBYPYX
			OITR	UROMIYEH	~~1700~~	1800	30	SINGAPORE	WSZZYPYX
			OIBK	KISH ISLAND/Kish	~~2300~~	0000	30	TOKYO	RJTDYPYX
					0535			Abu Dhabi	OMZZYPYX
					1135			Bahrain	OBZZYPYX
					1735			Beijing	ZBBBYPYX
					2335			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	0535		30		
			HEBL	ABU SIMBEL	1135		30		
			HETB	TABA/Intl	1735		30		
					2335				
		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
			HEPS	PORT SAID/Intl	0535		30		
			HESH	SHARM EL SHEIKH/Intl	1135		30		
			HESC	ST CATHERINE/Intl	1735		30		
					2335				

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

Twelfth Edition   **2004**

Rev. Mar 2015

ROBEX Handbook   *C - 2*

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

<div style="background:yellow">

~~AOP~~ Aerodromes listed in Table AOP 1

</div>

Name of the aerodrome	Use	ICAO loc.ind.	ROBEX SA bulletin	ROBEX FT bulletin	RODB
1	2	3	4	5	6
AFGHANISTAN					
KABUL AD	RS	OAKB			
KANDAHAR	RS	OAKN	no AFTN connection as of April 2010		
AMERICAN SAMOA(United States)					
PAGO PAGO INTERNATIONAL, TUTUILA I.	RS	NSTU	SAPS31 NFFN	FTPS31 NFFN	Nadi
AUSTRALIA					
ADELAIDE/Adelaide Intl	RS	YPAD	SAAU31 YBBN	FTAU31 YBBN	Brisbane
ALICE SPRINGS	AS	YBAS	SAAU31 YBBN	FTAU32 YBBN	
BRISBANE/Brisbane Intl	RS	YBBN	SAAU31 YBBN	FTAU31 YBBN	
CAIRNS/Cairns Intl	RS	YBCS	SAAU31 YBBN	FTAU32 YBBN	
CHRISTMAS ISLAND	RS	YPXM	SAAU31 YBBN	FTAU3~~3~~2 YBBN	
COCOS (KEELING) ISLAND INTL	RS	YPCC	SAAU31 YBBN	FTAU3~~3~~2 YBBN	
DARWIN/Darwin Intl	RS	YPDN	SAAU31 YBBN	FTAU31 YBBN	
HOBART	RS	YMHB	SAAU32 YBBN	FTAU3~~3~~2 YBBN	
MELBOURNE/Melbourne Intl	RS	YMML	SAAU31 YBBN	FTAU31 YBBN	
NORFOLK ISLAND INTL	RS	YSNF	SAAU32 YBBN	FTAU3~~3~~2 YBBN	
PERTH/Perth Intl	RS	YPPH	SAAU31 YBBN	FTAU31 YBBN	
PORT HEDLAND	RS	YPPD	SAAU32 YBBN	FTAU3~~3~~2 YBBN	
ROCKHAMPTON	AS	YBRK	SAAU32 YBBN	FTAU3~~3~~2 YBBN	
SYDNEY/Sydney (Kingsford Smith) Intl	RS	YSSY	SAAU31 YBBN	FTAU31 YBBN	
TINDAL	AS	YPTN	SAAU31 YBBN	FTAU32 YBBN	
TOWNSVILLE/Townsville Intl	RS	YBTL	SAAU31 YBBN	FTAU32 YBBN	
BANGLADESH					
M.A. HANNAN INTL. CHITTAGONG	RS	VGEG	SAIN33 VECC		Bangkok
HAZRAT SHAHJALAL INTERNATIONAL AIRPORT	RS	VGHS	SAIN33 VECC	FTAE32 VTBB	
BHUTAN					
PARO/Intl	RS	VQPR	SAIN31 VABB		Bangkok
BRUNEI DARUSSALAM					
BRUNEI/Intl	RS	WBSB	SAMS31 WMKK	FTSR33 WSSS	Singapore
CAMBODIA					
PHNOM PENH	RS	VDPP	SAAE31 VTBB	FTAE32 VTBB	Bangkok
SIEM REAP	AS	VDSR	SAAE31 VTBB	FTAE32 VTBB	

ROBEX Handbook *C - 3*

Name of the aerodrome	Use	ICAO loc.ind.	ROBEX SA bulletin	ROBEX FT bulletin	RODB
1	2	3	4	5	6
CANADA					Tokyo
ABBOTSFORD/Abbotsford	AS	CYXX			
CALGARY/Calgary Intl	RS	CYYC			
COMOX/Comox	AS	CYQQ			
EDMONTON/Edmonton Intl	RS	CYEG	**Not required for regular ROBEX exchange, but to be available on request through Tokyo RODB**		
VANCOUVER/Vancouver Intl	RS	CYVR			
VICTORIA/Victoria Intl	RNS	CYYJ			
CHILE					
ISLA DE PASCUA/Ad Mataveri	RS	SCIP			
CHINA					
BEIJING/Capital	RS	ZBAA	SACI31 ZBBB	FTCI31 ZBBB	Tokyo
CHANGSHA/Huanghua	RS	ZGHA	SACI41 ZBBB	FTCI41 ZBBB	
CHENGDU/Shuangliu	RS	ZUUU	SACI32 ZBBB	FTCI32 ZBBB	
CHONGQING/Jiangbei	RS	ZUCK	SACI41 ZBBB	FTCI41 ZBBB	
DALIAN/Zhoushuizi	RS	ZYTL	SACI31 ZBBB	FTCI31 ZBBB	
FUZHOU/Changle	RS	ZSFZ	SACI32 ZBBB	FTCI32 ZBBB	
GAOXIONG	RS	RCKH	SAHK31 VHHH	FTHK31 VHHH	
GUANGZHOU/Baiyun	RS	ZGGG	SACI31 ZBBB	FTCI31 ZBBB	
GUILIN/Lianjiang	RS	ZGKL	SACI32 ZBBB	FTCI32 ZBBB	
HANGZHOU/Xiaoshan	RS	ZSHC	SACI31 ZBBB	FTCI31 ZBBB	
HARBIN/Taiping	RS	ZYHB	SACI41 ZBBB	FTCI41 ZBBB	
HEFEI/Luogang	AS	ZSOF	SACI41 ZBBB	FTCI41 ZBBB	
HOHHOT/Baita	RS	ZBHH	SACI41 ZBBB	FTCI41 ZBBB	
JINAN/Yaoqiang	RS	ZSJN	not distributed		
KASHI/Kashi	RS	ZWSH	SACI31 ZBBB	FTCI31 ZBBB	
KUNMING/Wujiaba	RS	ZPPP	SACI32 ZBBB	FTCI32 ZBBB	
LANZHOU/Zhongchuan	AS	ZLLL	SACI41 ZBBB	FTCI41 ZBBB	
NANJING/Lukou	RS	ZSNJ	SACI41 ZBBB	FTCI41 ZBBB	
NANNING/Wuxu	AS	ZGNN	SACI32 ZBBB	FTCI32 ZBBB	
QINGDAO/Liuting	RS	ZSQD	SACI32 ZBBB	FTCI32 ZBBB	
SANYA/Phoenix	RS	ZJSY	SACI41 ZBBB	FTCI41 ZBBB	
SHANGHAI/Hongqiao	RS	ZSSS	SACI31 ZBBB	FTCI31 ZBBB	
SHANGHAI/Pudong	RS	ZSPD	SACI31 ZBBB	FTCI31 ZBBB	
SHENYANG/Taoxian	RS	ZYTX	SACI31 ZBBB	FTCI31 ZBBB	
SHENZHEN/BAOAN	RS	ZGSZ	SACI32 ZBBB	FTCI32 ZBBB	
TAIBEI/Songshan	AS	RCSS	SAHK31 VHHH	FTHK31 VHHH	
TAIBEI CITY/Taibei Intl Ap	RS	RCTP	SAHK31 VHHH	FTHK31 VHHH	
TAIYUAN/Wusu	AS	ZBYN	SACI31 ZBBB	FTCI31 ZBBB	
TIANJIN/Binhai	RS	ZBTJ	SACI31 ZBBB	FTCI31 ZBBB	
URUMQI/Diwopu	RS	ZWWW	SACI31 ZBBB	FTCI31 ZBBB	
WUHAN/Tianhe	RS	ZHHH	SACI41 ZBBB	FTCI41 ZBBB	
XIAMEN/Gaoqi	RS	ZSAM	SACI32 ZBBB	FTCI32 ZBBB	
XI'AN/Xianyang	RS	ZLXY	SACI32 ZBBB	FTCI32 ZBBB	
XICHANG/Quingshan	RNS	ZUXC	not distributed		
Hong Kong, CHINA					
HONG KONG/International	RS	VHHH	SAHK31 VHHH	FTHK31 VHHH	Tokyo
Macau, CHINA					
MACAU/Intl Airport	RS	VMMC	SAHK31 VHHH	FTHK31 VHHH	Tokyo
COOK ISLANDS					
RAROTONGA INTL.	RS	NCRG	SAPS31 NFFN	FTPS31 NFFN	Nadi

Twelfth Edition **rev. Mar 2015**

ROBEX Handbook   *C - 4*

Name of the aerodrome	Use	ICAO loc.ind.	ROBEX SA bulletin	ROBEX FT bulletin	RODB
1	2	3	4	5	6
DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA SUNAN	RS	ZKPY	(sent to RODB Singapore)		Tokyo
FIJI NADI/Intl	RS	NFFN	SAPS31 NFFN	FTPS31 NFFN	Nadi
FRENCH POLYNESIA NENGO-NENGO	AS	NTGG			Brisbane
TAHITI FAAA	RS	NTAA	SAPS31 NFFN	FTPS31 NFFN	Nadi
INDIA AHMEDABAD	RS	VAAH	SAIN31 VABB	FTIN31 VABB	Bangkok
AMRITSAR	RS	VIAR	SAIN32 VIDP	FTIN31 VABB	
BANGALORE INTERNATIONAL AIRPORT	RS	VOBL			
CALICUT	RS	VOCL		FTIN32 VABB	
CHENNAI	RS	VOMM	SAIN31 VABB	FTIN32 VABB	
COCHIN INTERNATIONAL	RS	VOCI		FTIN32 VABB	
COIMBATORE	RS	VOCB			
DELHI/Indira Gandi Intl	RS	VIDP	SAIN32 VIDP	FTIN31 VABB	
GAYA	RS	VEGY			
GUWAHATI	RS	VEGT			
HYDERABAD INTERNATIONAL AIRPORT	RS	VOHS	SAIN31 VABB	FTIN32 VABB	
JAIPUR	RS	VIJP	SAIN32 VIDP	FTIN31 VABB	
LUCKNOW	RS	VILK	SAIN32 VIDP	FTIN31 VABB	
MANGALORE	RS	VOML			
MUMBAI/Chhatrapati Shivaji Intl.	RS	VABB	SAIN31 VABB	FTIN31 VABB	
NAGPUR	RS	VANP	SAIN31 VABB	FTIN31 VABB	
NETAJI SUBHASH CHANDRA BOSE INTERNATIONAL AIRPORT, KOLKATA	RS	VECC	SAIN33 VECC	FTIN31 VABB	
PATNA	RS	VEPT	SAIN33 VECC	FTIN31 VABB	
TIRUCHCHIRAPPALLI	RS	VOTR	SAIN31 VABB	FTIN32 VABB	
TRIVANDRUM	RS	VOTV	SAIN31 VABB	FTIN32 VABB	
VARANASI	RS	VIBN	SAIN32 VIDP	FTIN31 VABB	
INDONESIA AMBON/Pattimura	RNS	WAPP	SAID33 WIII		Singapore
BALI/Ngurah Rai	RS	WADD	SAID31 WIII	FTSR31 WSSS	
BALIK PAPAN/Sepinggan	RS	WALL	SAID32 WIII		
BANJARMASIN/Syamsudin Noor	AS	WAOO	SAID32 WIII		
BATAM/Hang Nadim	AS	WIDD	SAID31 WIII		
BIAK/Frans Kaisiepo	RS	WABB	SAID31 WIII	FTSR31 WSSS	
JAKARTA/Halimperdana Kusuma	RNS	WIHH	SAID31 WIII	FTSR31 WSSS	
JAKARTA/Soekarno Hatta (Comm Center)	RS	WIII	SAID31 WIII	FTSR31 WSSS	
JAYAPURA/Sentani	RS	WAJJ	SAID33 WIII		
KUPANG/El Tari	RS	WATT	SAID33 WIII		
MANADO/Sam Ratulangi	RS	WAMM	SAID32 WIII		
MEDAN/Polonia	RS	WIMM	SAID31 WIII	FTSR31 WSSS	
MERAUKE/Mopah	RNS	WAKK	SAID33 WIII		
PADANG/Tabing	RS	WIMG	SAID32 WIII		
PALEMBANG/Sultan Mahmud Badaruddin II	RNS	WIPP	SAID32 WIII		
PEKANBARU/Sultan Syarif Kasim II	RS	WIBB	SAID32 WIII		
PONTIANAK/Supadio	RS	WIOO	SAID32 WIII		
SURABAYA/Juanda	RS	WARR	SAID31 WIII	FTSR31 WSSS	
TANJUNG PINANG/Kijang	RS	WIDN	SAID32 WIII		
TARAKAN/Juwata	RS	WALR	SAID33 WIII		
TIMIKA/Moses Kilangin	RNS	WABP	SAID33 WIII		
UJUNG PANDANG/Hasanuddin (Comm Center)	RNS	WAAA	SAID31 WIII	FTSR31 WSSS	

ROBEX Handbook *C - 5*

Name of the aerodrome	Use	ICAO loc.ind.	ROBEX SA bulletin	ROBEX FT bulletin	RODB
1	2	3	4	5	6
JAPAN					
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	
KIRIBATI					
CHRISTMAS ISLAND	RS	PLCH	SAPS31 NFFN	FTPS31 NFFN	Nadi
TARAWA/Bonriki Intl	RS	NGTA		FTPS31 NFFN	
LAO PEOPLE'S DEMOCRATIC REPUBLIC					
VIENTIANE (WATTAY)	RS	VLVT	SAAE31 VTBB	FTAE33 VTBB	Bangkok
MALAYSIA					
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	
MALDIVES					
GAN	AS	VRMG		FTIN32 VABB	Bangkok
MALE/Intl	RS	VRMM	SASB31 VCCC	FTIN32 VABB	
MARSHALL ISLANDS					
MAJURO ISLANDS/Intl Majuro Atoll	RS	PKMJ	SAPA31 KWBC		
MICRONESIA (Federated States of)					
POHNPEI INTL, POHNPEI ISLAND	RS	PTPN			
WENO ISLAND, FM CHUUK INTL.	RS	PTKK	SAPA31 KWBC		
YAP INTL, YAP ISLAND	RS	PTYA	SAPA31 KWBC		

ROBEX Handbook   *C - 6*

Name of the aerodrome	Use	ICAO loc.ind.	ROBEX SA bulletin	ROBEX FT bulletin	RODB
1	2	3	4	5	6
MONGOLIA ULAANBAATAR	RS	ZMUB	SACI32 ZBBB	FTCI32 ZBBB	Tokyo
MYANMAR YANGON INTERNATIONAL	RS	VYYY	SAAE31 VTBB	FTAE32 VTBB	Bangkok
NAURU NAURU I.	RS	ANYN		FTNG31 YBBN	Brisbane
NEPAL KATHMANDU	RS	VNKT	SAIN33 VECC	FTIN32 VABB	Bangkok
NEW CALEDONIA (France) NOUMEA LA TONTOUTA	RS	NWWW	SAPS31 NFFN	FTPS31 NFFN	Nadi
NEW ZEALAND 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
NIUE(New Zealand) NIUE INTL	RS	NIUE	SAPS31 NFFN	FTPS31 NFFN	Nadi
NORTHERN MARIANA ISLANDS (United States) 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			
PAKISTAN 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
PALAU BABELTHUAP/Koro, Babelthuap Island	RS	PTRO			
PAPUA NEW GUINEA PORT MORESBY INTL VANIMO	RS RS	AYPY AYVN	SANG31 YBBN SANG31 YBBN	FTNG31 YBBN	Brisbane
PHILIPPINES 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

ROBEX Handbook   *C - 7*

Name of the aerodrome	Use	ICAO loc.ind.	ROBEX SA bulletin	ROBEX FT bulletin	RODB
1	2	3	4	5	6
REPUBLIC OF KOREA					
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	
SAMOA					
FALEOLO/Faleolo Intl	RS	NSFA	SAPS31 NFFN	FTPS31 NFFN	Nadi
SINGAPORE					
PAYA LEBAR (RSAF)	AS	WSAP		FTSR31 WSSS	Singapore
SELETAR	RS	WSSL	SAMS31 WMKK	FTSR31 WSSS	
SINGAPORE/Changi	RS	WSSS	SAMS31 WMKK	FTSR31 WSSS	
SOLOMON ISLANDS					
HONIARA (HENDERSON)	RS	AGGH	SANG31 YBBN	FTNG31 YBBN	Brisbane
SRI LANKA					
BANDARANAIKE INTERNATIONAL AIRPORT COLOMBO	RS	VCBI	SASB31	FTIN32 VABB	Bangkok
MATTALA RAJAPAKSA INTERNATIONAL AIRPORT	RS	VCRI	SASB31	FTIN32 VABB	
HIGURAKGODA/Mineriya	AS	VCCH			
THAILAND					
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	VTPP	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	
TONGA					
FUA'AMOTU INTL.	RS	NFTF	SAPS32 NFFN	FTPS31 NFFN	Nadi
VAVA'U	RS	NFTV	SAPS32 NFFN	FTPS31 NFFN	
TUVALU					
FUNAFUTI/Intl	RS	NGFU	SAPS31 NFFN		Nadi

Twelfth Edition   **rev. Mar 2015**

ROBEX Handbook   *C - 8*

Name of the aerodrome	Use	ICAO loc.ind.	ROBEX SA bulletin	ROBEX FT bulletin	RODB
1	2	3	4	5	6
UNITED STATES					Tokyo
ANCHORAGE/Anchorage Intl	RS	PANC			
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	**Not required for regular ROBEX exchange,**		
FRESNO/Fresno Air Terminal	AS	KFAT	**but to be available on request through**		
HILO/General Lyman Field	AS	PHTO	**Tokyo RODB**		
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			

Twelfth Edition   **rev. Mar 2015**

ROBEX Handbook   *C - 9*

Name of the aerodrome	Use	ICAO loc.ind.	ROBEX SA bulletin	ROBEX FT bulletin	RODB
1	2	3	4	5	6
VANUATU					
PORT VILA/Bauerfield	RS	NVVV	SAPS32 NFFN	FTPS31 NFFN	Nadi
SANTO/Pekoa	RS	NVSS	SAPS32 NFFN	FTPS31 NFFN	
VIET NAM					
DA NANG	AS	VVDN	SAAE33 VTBB	FTAE34 VTBB	Bangkok
HA NOI/Noi Bai	RS	VVNB	SAAE33 VTBB	FTAE34 VTBB	
HUE/Phu Bai	RS	VVPB	SAAE33 VTBB	FTAE34 VTBB	
HO CHI MINH/Tan Son Nhat	RS	VVTS	SAAE33 VTBB	FTAE34 VTBB	
WALLIS ISLANDS(France)					
WALLIS HIHIFO	RS	NLWW	SAPS32 NFFN	FTPS31 NFFN	Nadi

* To be implemented

Additional ~~non-AOP~~ Aerodromes not listed in Table AOP 1

AUSTRALIA					
AMBERLEY		YAMB	SAAU32 YBBN	FTAU343 YBBN	Brisbane
AVALON		YMAV	SAAU32 YBBN	FTAU32 YBBN	
BROOME/Broome Intl		YBRM	SAAU32 YBBN	FTAU332 YBBN	
CANBERRA		YSCB	SAAU31 YBBN	FTAU32 YBBN	
COFFS HARBOUR		YCFS	SAAU31 YBBN	FTAU332 YBBN	
CURTIN		YCIN	SAAU32 YBBN	FTAU345 YBBN	
DUBBO		YSDU	SAAU32 YBBN	FTAU33 YBBN	
FORREST		YFRT	SAAU32 YBBN	FTAU345 YBBN	
GERALDTON		YGEL	SAAU32 YBBN	FTAU32 YBBN	
GOLD COAST		YBCG	SAAU31 YBBN	FTAU32 YBBN	
GOVE		YPGV	SAAU32 YBBN	FTAU345 YBBN	
HAMILTON ISLAND		YBHM	SAAU32 YBBN	FTAU34 YBBN	
HORN ISLAND		YHID	SAAU31 YBBN	FTAU33 YBBN	
KLAGOORLIE-BOULDER		YPKG	SAAU32 YBBN	FTAU32 YBBN	
KUNUNURRA		YPKU	SAAU31 YBBN	FTAU345 YBBN	
LAUNCESTON		YMLT	SAAU32 YBBN	FTAU332 YBBN	
LEARMONTH		YPLM	SAAU31 YBBN	FTAU32 YBBN	
LORD HOWE ISLAND		YLHI		FTAU32 YBBN	
MOUNT ISA		YBMA	SAAU32 YBBN	FTAU34 YBBN	
PEARCE		YPEA	SAAU32 YBBN	FTAU33 YBBN	
PERTH/Jandakot		YPJT	SAAU31 YBBN	FTAU33 YBBN	
RICHMOND, NSW		YSRI	SAAU32 YBBN	FTAU33 YBBN	
TAMWORTH		YSTW	SAAU31 YBBN	FTAU33 YBBN	
WILLIAMTOWN		YWLM	SAAU32 YBBN	FTAU332 YBBN	
WOOMERA		YPWR	SAAU32 YBBN	FTAU33 YBBN	
CHINA					
CHANGCHUN/Longjia		ZYCC	SACI41 ZBBB	FTCI41 ZBBB	
HAIKOU*/Meilan		ZJHK	SACI41 ZBBB	FTCI41 ZBBB	Tokyo
NINGBO/Lishe		ZSNB	SACI32 ZBBB	FTCI32 ZBBB	
SHANTOU/Waisha*		ZGOW	SACI32 ZBBB	FTCI32 ZBBB	
SHIJAZHUANG/Zhengding		ZBSJ	SACI31 ZBBB	FTCI31 ZBBB	
ZHENGZHOU/Xinzheng		ZHCC	SACI41 ZBBB	FTCI41 ZBBB	
FIJI					
NAUSOR/Intl		NFNA	SAPS31 NFFN	FTPS31 NFFN	
INDIA					
HYDERABAD		VOHY	SAIN31 VABB	FTIN32 VABB	Bangkok

ROBEX Handbook　　　　　　　　　　　　　　　　　　　　　　　　　　　　*C - 10*

Name of the aerodrome	Use	ICAO loc.ind.	ROBEX SA bulletin	ROBEX FT bulletin	RODB
1	2	3	4	5	6
INDONESIA					
PRAYA/LOMBOK INTERNATIONAL		WADL	SAID32 WIII		Singapore
SEMARANG/A. Yani		WARS	SAID33 WIII		
BANDAR LAMPUNG/Radin Inten		WICT	SAID33 WIII		
JAPAN					
AKITA		RJSK	SAJP38 RJTD	FTJP38 RJTD	Tokyo
AOMORI		RJSA	SAJP38 RJTD	FTJP38 RJTD	
ASAHIKAWA (civil)		RJEC	SAJP38 RJTD	FTJP38 RJTD	
FUKUSHIMA		RJSF	SAJP38 RJTD	FTJP38 RJTD	
HYAKURI		RJAH	SAJP38 RJTD	FTJP38 RJTD	
ISHIGAKI JIMA		ROIG	SAJP38 RJTD	FTJP38 RJTD	
IZUMO		RJOC	SAJP38 RJTD	FTJP38 RJTD	
KANAZAWA/Komatsu		RJNK	SAJP38 RJTD	FTJP32 RJTD	
KOCHI		RJOK	SAJP38 RJTD	FTJP38 RJTD	
KUSHIRO		RJCK	SAJP38 RJTD	FTJP38 RJTD	
MATSUYAMA		RJOM	SAJP38 RJTD	FTJP38 RJTD	
MEMANBETSU		RJCM	SAJP38 RJTD	FTJP38 RJTD	
MIHO		RJOH	SAJP38 RJTD	FTJP38 RJTD	
MIYAZAKI		RJFM	SAJP38 RJTD	FTJP38 RJTD	
NEW KITAKYUSHU		RJFR	SAJP38 RJTD	FTJP38 RJTD	
OBIHIRO		RJCB	SAJP38 RJTD	FTJP38 RJTD	
SHIZUOKA		RJNS	SAJP38 RJTD	FTJP38 RJTD	
TOYAMA		RJNT	SAJP38 RJTD	FTJP32 RJTD	
LAO PDR					
LUANG PRABANG		VLLB	SAAE32 VTBB	FTAE33 VTBB	Bangkok
LUANG NAMTHA		VLLN	SAAE32 VTBB	FTAE33 VTBB	
PAKSE		VLPS	SAAE32 VTBB	FTAE33 VTBB	
SAVANNAKHET		VLSK	SAAE32 VTBB	FTAE33 VTBB	
MALAYSIA					
BINTULU		WBGB	SAMS38 WMKK	FTSR33 WSSS	Singapore
KUANTAN		WMKD	SAMS38 WMKK		
LABUAN		WBKL	SAMS38 WMKK	FTSR33 WSSS	
MALACCA		WMKM	SAMS38 WMKK	FTSR32 WSSS	
MIRI		WBGR	SAMS38 WMKK	FTSR33 WSSS	
SANDAKAN		WBKS	SAMS38 WMKK	FTSR33 WSSS	
SIBU		WBGS	SAMS38 WMKK	FTSR33 WSSS	
SUBANG/Sultan Abdul Aziz Shah		WMSA		FTSR32 WSSS	
TAWAU		WBKW	SAMS38 WMKK	FTSR33 WSSS	
MYANMAR					
MANDALAY INTERNATIONAL		VYMD	SAAE31 VTBB	FTAE32 VTBB	Bangkok
PAKISTAN					
SUKKUR		OPSK	SAPK31 OPKC	FTPK31 OPKC	Bangkok
PAPUA NEW GUINEA					
GURNEY		AYGN	SANG31 YBBN		Brisbane
MOMOTE		AYMO	SANG31 YBBN		
MOUNT HAGEN		AYMH	SANG31 YBBN		
NADZAB		AYNZ	SANG31 YBBN		
WEWAK		AYWK	SANG31 YBBN		

Twelfth Edition　　　　　　　　　　　　　　　　　　　　　　　　　　**rev. Mar 2015**

ROBEX Handbook   *C - 11*

Name of the aerodrome	Use	ICAO loc.ind.	ROBEX SA bulletin	ROBEX FT bulletin	RODB
1	2	3	4	5	6
PHILIPPINES					
SUBIC BAY, Subic Bay Intl, Olongapo City, Zambales		RPLB	SAHK31 VHHH	FTHK31 VHHH	Tokyo
SAMOA					
THAILAND					
BURI RAM		VTUO	SATH33 VTBB	FTTH33 VTBB	Bangkok
CHUMPHON/Tab Gai		VTSE	SATH41 VTBB	FTTH32 VTBB	
MAE HONG SON		VTCH	SATH31 VTBB	FTTH31 VTBB	
LAMPANG		VTCL	SATH31 VTBB	FTTH31 VTBB	
LOEI		VTUL	SATH33 VTBB	FTTH33 VTBB	
NAKHON PHANOM		VTUW	SATH33 VTBB	FTTH33 VTBB	
NAKHON RATCHASIMA		VTUQ	SATH33 VTBB	FTTH33 VTBB	
NAKHON SI THAMMARAT		VTSF	SATH32 VTBB	FTTH32 VTBB	
NAN		VTCN	SATH31 VTBB	FTTH31 VTBB	
NARATHIWAT		VTSC	SATH32 VTBB	FTTH32 VTBB	
PATTANI		VTSK	SATH41 VTBB	FTTH32 VTBB	
PHETCHABUN		VTPB	SATH41 VTBB	FTTH31 VTBB	
PHRAE		VTCP	SATH31 VTBB	FTTH31 VTBB	
PRACHUAP KHIRI KHAN/Huan Hin		VTPH	SATH31 VTBB	**FTTH31 VTBB**	
RANONG		VTSR	SATH32 VTBB	FTTH32 VTBB	
ROI ET		VTUV	SATH33 VTBB	FTTH33 VTBB	
SAKON NAKHON/Ban Khai		VTUI	SATH33 VTBB	FTTH33 VTBB	
SONGKHLA		VTSH	SATH32 VTBB	FTTH32 VTBB	
SUKHOTHAI		VTPO	SATH31 VTBB	FTTH31 VTBB	
SURAT THANI/Samui		VTSM	SATH32 VTBB	FTTH32 VTBB	
SURIN		VTUJ	SATH41 VTBB	FTTH33 VTBB	
TAK		VTPT		FTTH31 VTBB	
TAK/Mae Sot		VTPM	SATH41 VTBB	FTTH31 VTBB	
TRANG		VTST	SATH32 VTBB	FTTH32 VTBB	
TRAT/Khao Sming		VTBO	SATH33 VTBB	**FTTH33 VTBB**	
UDON THANI		VTUD	SATH33 VTBB	FTTH33 VTBB	
TIMOR LESTE					
DILI/Presidente Nicolau Lobato Intl		WPDL		FTTM31 YBBN	Brisbane
TONGA					
HA'APAI		NFTL	SAPS32 NFFN		Nadi

Twelfth Edition   **rev. Mar 2015**

APPENDIX D

BACK-UP PROCEUDURES AT THE ASIA/PAC INTER-REGION OPMET GATEWAYS

(First edition July 2012)

1.   INTRODUCTION

1.1   The back-up procedure to ensure the continuity of OPMET exchange with Europe and the availability of the ASIA PAC OPMET on SADIS Gateway was established in April 2004. Bangkok RODB will take over Singapore's role when operational interruption occurs in Singapore RODB.

1.2   OPMET/M TF/3 Meeting proposed that both RODBs, in coordination with the Secretariat and London IROG should perform a real-time test of the procedures in order to practice and maintain regularity and currency in the event of an outage affecting messages switching to Europe region.

1.3   The Bangkok and Singapore RODBs have developed a mutual back-up arrangement that includes procedures for undertaking a back-up test as described in this document.

2.   PURPOSE

2.1   The purpose of the back-up test is to validate the dissemination process for notification messages between IROGs and ensure that the procedures for handover and takeover of responsibility are functional.

3.   PROCEDURES

3.1   Singapore IROG provides the Asia Pac OPMET bulletins information to Bangkok IROG to establish the back-up distribution arrangement. Both IROGs are responsible to update the distribution list as and when required.

3.2   To activate the back-up plan, both IROGs will communication through facsimile and email.

3.3   Bangkok IROG will provide the contact points information and update periodically if required.

3.4   Both IROGs will review the back-up procedures and identify areas for improvement.

3.5   The OPMET Management TF will review the back-up procedures during the meeting if necessary.

4.   REAL-TIME BACK-UP TEST PROCEDURE

4.1   As the back-up test cum monitoring would consume considerable resources, both IROGs agreed to monitor a list of selected ASIA PAC OPMET bulletins. IROG back-up procedures are to be tested at least annually. The exercise is normally of 6 hours duration, between 0200 and 0800 UTC.

4.2   Communication test

4.2.1   The communication test between the IROGs through facsimile and email shall be conducted two days before the exercise.

4.3   Real-time back-up exercise

4.3.1   At the day of exercise, Singapore IROG shall inform Bangkok IROG to take over its role when it stops sending the selected OPMET messages on the AFTN.

4.3.2   Bangkok IROG shall acknowledge the notification messages and start relaying Asia Pac OPMET Information to WAFC, London.

4.3.3   Both IROGs shall record the reception and transmission of the monitored OPMET bulletins during the exercise.

4.3.4   At the end of back-up test, both IROGs shall resume message switching as per normal after exercising stand-down procedures.

5.   ASSESSMENT

5.1   Both IROGs shall evaluate the monitoring result and address the following issues during the ROBEX WG meeting:

(i)   Monitoring result in term of message throughput (comparison of percentage of messages received against messages relayed);
(ii)   Transit time of the relayed messages;
(iii)   Undertake the necessary follow-up of issues arose from the exercise; and
(iv)   Verify and develop existing procedures.

****

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:

$T_1T_2A_1A_2ii$ CCCC YYGGgg (BBB)

2.   Explanation of the symbols

2.1. $T_1T_2A_1A_2ii$ **–** 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 $\underline{T_1T_2}$ - Data type designator, used for OPMET data as follows:

Data type	Abbreviated name	WMO data type designator T_1T_2
Aerodrome reports	METAR	SA
	SPECI	SP
Aerodrome forecasts	TAF: 12 to 30 hour	FT
	9 hour	FC
SIGMET information	SIGMET	WS
	SIGMET for TC	WC
	SIGMET for VA	WV
Volcanic ash and tropical cyclone advisories	VAA	FV
	TCA	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 $\underline{A_1A_2}$ - 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_1A_2 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_1A_2 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_1A_2	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

A_1A_2	Country or territory
KW	Kuwait
LA	Lao People's Democratic Republic
LB	Lebanon
ME	Eastern Mediterranean area
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
OC	Oceania
OM	Oman
PA	Pacific area
PF	French Polynesia
PH	Philippines
PK	Pakistan
PN	North Pacific area
PQ	Western North Pacific
PS	South Pacific area
PW	Western Pacific area
PZ	Eastern Pacific area
QT	Qatar
SB	Sri Lanka
SD	Saudi Arabia
SJ	Sea of Japan area
SO	Solomon Islands
SR	Singapore
SS	South China Sea area
SY	Syrian Arab Republic
TH	Thailand
TM	Timor

A₁A₂	Country or territory
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 use ii numbers of the set "01 – 59" for routine reports, "60 – 69" for special reports (except for volcanic ash) and "70 – 79" for special reports (related to volcanic ash). 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 VOCI 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 11th
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   <u>Prepare</u> 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   <u>Relay</u> Antananarivo TAF bulletin FTI031 to Jeddah ODREP and Bombay.

1.3   <u>Relay</u> 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   <u>Relay</u> Bombay TAF bulletin FTAS31 to Nairobi.

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

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

MOTNE Bulletins/ Bulletins MOTNE	To aerodromes / Vers les aérodromes					
	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

APPENDIX G

Format of METNO bulletin for APAC ROBEX Bulletins

METNO Message Format (Example):

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

(1) The METNO Bulletin/Report reference only contains the Bulletin/Report index TTAAii $CCCC_1$ $CCCC_2$ where:

- TTAAii is the abbreviated header
- $CCCC_1$ the compiling centre
- $CCCC_2$ 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 Procedures

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

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

1.1.4   TAF Validation

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

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

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

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 <mark>and RDOACT CLD</mark>	WS
	SIGMET for VA	WV
	SIGMET for TC	WC
Validity Period DDHHMM/DDHHMM	Shall have a valid period of validity. Validity periods may be corrected if: • Missing VALID string • Incorrect SIGMET number format • Incorrectly formatted validity period	
Note: For SIGMET validation, please refer to the format described in the ASIA/PAC Regional SIGMET Guide.		

Examples:	After QC check
SIGMET without TTAAii: **SIGMET** 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=	**WSXX31** 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=
SIGMET with incorrect number format WCPH30 RPLL 210445 SIGMET **NO 01** VALID 210000/210600 RPLL TC OBS N0830 E12900 ….=	WCPH30 RPLL 210445 SIGMET **01** VALID 210000/210600 RPLL TC OBS N0830 E12900 … =
SIGMET with incorrect formatted validity period: WSIN90 VIDP 181800 VIDP SIGMET 06 VALID **18/1600 TO 18/2000 UTC** VIDP- DELHI FIR EMBD TS … = WSSD20 OEJD 220503 OEJD SIGMET 01 VALID **220500 TO 220900** OEJN- JEDDAH FIR ….=	WSIN90 VIDP 181800 VIDP SIGMET 06 VALID **181600/182000** VIDP- DELHI FIR EMBD TS … = WSSD20 OEJD 220503 OEJD SIGMET 01 VALID **220500/220900** OEJN- JEDDAH FIR … =

1.2   Quality Control Methods

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

2   **OPMET Monitoring**

2.1   Monitoring of Scheduled OPMET data

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

               (i) Compliance Index

               The ROBEX Compliance index can be calculated from:

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

               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.

Explanations:

No. of reports received for a bulletin is the number of reports that are not "NIL." In other words, do not count the reports that are "NIL." In addition, do not count reports that are correction and amendment in nature. However, the assessment should include the delayed reports in the retard bulletins.

No. of reports required for a bulletin is the number of reports that each RODB should expect to receive within each particular bulletin.

Procedure:
1. For each day, run through the aerodromes within each bulletin. Count the numbers of reports that do not contain optional elements and are not "NIL." Alternatively count the number of reports that contain "Optional RRX
2. For each day, calculate the required number of reports for each bulletin by adding the number of required reports for each aerodrome listed in each bulletin.
3. For each day, calculate the compliance index by taking the ratio of the No. of reports received for a bulletin (calculated in 1.) and the No. of reports required for a bulletin (calculated in 2.).
4. To calculate monthly compliance index, add up the compliance index (calculated in 3.) of all the days in a month and divide by the number of days in month, e.g., 288/288 + 240/288 + 288/288 + ... + 288/288 => (31 elements for 31 days)
5. Alternatively, to calculate monthly compliance index, add up the No. of reports received for a bulletin (calculated in 1.) for all the days in a month

and divide by the No. of reports required for a bulletin (calculated in 2.) in that month.

Example 1:
Bulletin SAIN33 includes 6 aerodromes: VECC, VEPT, VGEG, VGHS, VNKT and VQPR. For each aerodrome, the No. of reports required for a bulletin equals 2*24 = 48 reports. If only on the 2nd of March, RODB does not receive reports from one aerodrome. Calculate the compliance index for Bulleting SAIN33 in March.?
Answer:
No. of reports received for a bulletin
= (6 aerodromes*48 reports*30 days) + (5 aerodromes*48 reports*1 day)
= 8,640 + 240
= 8,880
No. of reports required for a bulletin
= (6 aerodromes*48 reports*31 days) = 8,928
March compliance index = 8,880/8,928 = 0.9946

(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:

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

NIL data type is defined as data element that reports that there are no observations (SA) or forecast (FT).

Non-NIL data type is defined as data element that is not "NIL" i.e. not (METAR VTBD 270200Z NIL=).

No of aerodromes for which one or more non-NIL data type are received is the number of aerodromes which receives one or more Non-NIL data type within a period of one day or 24 hours.

No of aerodromes required in the bulletins is the total number of aerodromes listed in the bulletin from which RODB should receive data from.

For example, the Bulletin SAIN33:
SAIN33 VECC 012350
METAR VECC 012350Z 16004KT 2500 HZ SCT018 BKN100 28/26 Q0996 NOSIG=
METAR VEPT 012350Z NIL=
METAR VGEG 012350Z 14007KT 6000 SCT015 BKN100 27/26 Q0998 NOSIG=
METAR VGHS 012350Z 17005KT 4000 HZ BKN010 OVC100 28/25 Q0997 TEMPO RA=
METAR VNKT 012350Z NIL=

METAR VQPR 012350Z NIL=

The No. of aerodromes required in the bulletin SASD31 for that particular day is 6 aerodromes.

Procedure:
1. For each day or the period of 24 hours, obtain the No. of aerodromes required in the bulletin.
2. For each day or the period of 24 hours, run through the aerodromes within each bulletin. Count the numbers reports received from each aerodrome that contain NON-NIL data type. If the number exceeds zero, then that aerodrome receives one point, else zero point. Add up the points of each aerodrome to obtain the No of aerodromes for which one or more non-NIL data type is received.
3. For each day, calculate the availability index by taking the ratio of the No of aerodromes for which one or more non-NIL data type are received (calculated in 2.) and the No. of aerodromes required in the bulletin (calculated in 1.)
4. To calculate monthly availability index, add up the daily availability index (calculated in 3.) of all the days in a month and divide by the number of days in month, e.g., 6/6 + 6/6 + 6/6 + 5/6 + 4/6 + 6/6 + ... + 2/6 => (31 elements for 31 days).
5. Alternatively, to calculate monthly availability index, add up the No of aerodromes for which one or more non-NIL data type are received (calculated in 2.) for all the days in a month and divide by the No. of aerodromes required in the bulletin (calculated in 1.) in that month.

Example 2:
Bulletin SAIN33 continued from example 1.
Calculate the availability index for Bulleting SAIN33 in March.?
Answer:
No. of aerodromes required in the bulletin
= 6 aerodromes *31 days
= 186
No of aerodromes for which one or more non-NIL data type are received
= (6 aerodromes*30 days) + (5 aerodromes*1 day)
= 180 + 5
= 185
March availability index = 185/186 = 0.9946

(iii) Regularity Index

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

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

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

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:

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

The **threshold** is the number of reports provided by the aerodrome which is considered "regular." This number is defined by calculating the statistics (mean and standard deviation) of the number of reports provided by the aerodrome within a time frame e.g., a period of 6 months, 1 year, or 5 years.

No of aerodromes which the number of reports exceeds the threshold is the number of aerodromes which provides more than τ reports within a period of one day or 24 hours.

No of aerodromes required in the bulletin is the total number of aerodromes listed in the bulletin from which RODB should receive data from.

Procedure:
1. Calculate the threshold of each aerodrome within RODB's responsibility by collecting the number of reports each aerodrome receives within the given time frame.
2. For each aerodrome, find the mean (average) and standard deviation (deviation from the mean), e.g., for a time frame of five days (for simplicity), VECC provides daily 10, 7, 10, 8, and 9 reports respectively, therefore, Mean = (10+7+10+8+9)/5 = 8.8 and Standard deviation = sqrt [(10-8.8)^2+(7-8.8)^2+(10-8.8)^2+(8-8.8)^2+(9-8.8)^2] / 5 = 1.304
3. Calculate the threshold by subtracting the standard deviation from the mean. From the above example, the threshold τ = 8.8-1.304 = 7.45 reports.
4. For each day or the period of 24 hours, run through the aerodromes within each bulletin. Count the numbers reports received from each. If the number exceeds τ, then that aerodrome receives one point, else zero point. Add up the points of each aerodrome to obtain the No of aerodromes which the number of reports exceeds the threshold.
5. For each day or the period of 24 hours, obtain the No. of aerodromes required in the bulletin.
6. For each day, calculate the regularity index by taking the ratio of the No of aerodromes which the number of reports exceeds the threshold (calculated in 4) and the No. of aerodromes required in the bulletin (calculated in 5).
7. To calculate monthly regularity index, add up the daily availability index (calculated in 3) of all the days in a month and divide by the number of

days in month, e.g., 6/6 + 6/6 + 6/6 + 5/6 + 4/6 + 6/6 + ... + 2/6 => (31 elements for 31 days).

8. Alternatively, to calculate monthly availability index, add up the No of aerodromes which the number of reports exceeds the threshold (calculated in 4) for all the days in a month and divide by the No. of aerodromes required in the bulletin (calculated in 5) in that month.

Example 3:
Bulletin SAIN33 continued from example 1.

Aerodrome	Threshold
VECC	10 reports
VEPT	10 reports
VGEG	10 reports
VGHS	10 reports
VNKT	10 reports
VQPR	10 reports

If on the 2nd and 15th of March, RODB does not receive reports from VQPR and on 15th of March, RODB does not receive reports from VGEG. On any other days, all the aerodromes provided more than 10 reports. Calculate the regularity index for Bulletin SAIN33 in March.

Answer:
No. of aerodromes required in the bulletin = 6 aerodromes *31 days = 186
No of aerodromes which the number of reports exceeds the threshold
= (6 aerodromes*29 days) + (5 aerodromes*2 days)
= 174 + 10 = 184
March regularity index = 184/186 = 0.9892

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:

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

Explanations to the table:

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

2.2.4   Analysis of Monitoring Results:

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

ROBEX Handbook   *I-1*

APPENDIX I

ROBEX FOCAL POINTS

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ROBEX Handbook *I-2*

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ROBEX Handbook   *I-3*

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ROBEX Handbook   *I-4*

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ROBEX Handbook   *I-5*

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ROBEX Handbook   *I-6*

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