

International Civil Aviation Organization

ICAO

WORKING PAPER (WP/09)**ICAO Asia and Pacific (APAC)**Twenty-Eighth Meeting of the Meteorology Sub-Group
(MET SG/28)

Bangkok, Thailand, 8 to 12 July 2024

Agenda Item 4: Regional guidance material**ROBEX HANDBOOK UPDATE - METNO GUIDANCE**

(Presented by Australia, Hong Kong China and New Zealand)

SUMMARY

This paper presents the proposed ROBEX Handbook updates for METNO guidance related to the timing of METNO message issuance, example of METNO message, sender of METNO message, METNO message header and METNO focal point.

1. INTRODUCTION

1.1 [MET/IE WG/21 – Filmsy/01](#) provides the description of issues concerning guidance on METNO identified in the ROBEX Handbook. APAC ROBEX Handbook, Appendix E was updated with the addition of General rules in METNO Procedure when the ROBEX Handbook was updated from the 13th to 14th edition published in 2022. As a result, inconsistencies or ambiguities were identified between the METNO procedures mentioned in *Section 13.1 - Changes to OPMET Bulletin Procedures* and *Appendix E Section 1 – METNO Procedures – General rules*.

1.2 The Meeting was informed that the ICAO Meteorology Panel (METP) Working Group on Meteorological Information Exchange (WG-MIE) was looking into developing a globally consistent procedure for METNO. There was a push to adopt the Europe procedure globally.

1.3 MET/IE WG/21 tasked the Secretariat, Chair, Vice Chair and METNO focal points and invited the RODBs to keep abreast of the METP developments and develop a proposal to improve the APAC ROBEX Handbook for consideration by the MET SG with the following Action:

ACTION MET/IE WG 21 – 15

Keep abreast of the METP developments on METNO procedures and develop a proposal to improve the METNO procedure in the APAC ROBEX Handbook.

1.4 MET/IE WG/22 noted the proposed update to the ROBEX Handbook for METNO guidance related to the timing of METNO message issuance and example of METNO message ([MET/IE WG/22 – WP/24](#)). The meeting supported the proposed update, and also requested Australia, Hong Kong China and New Zealand to clarify the distribution to IROG partners in other regions, further refinements on the contents regarding the METNO focal points, ensuring clear distinction to the purpose of the ROBEX focal points, and METNO message header to be presented for review and approval at MET SG/28 through the following Action:

ACTION MET/IE WG 22 – 12: ROBEX Handbook updates – METNO guidance

Include within the proposed changes (as presented in MET/IE WG/22 WP/24), distribution to IROG partners in other regions, further refinements on the contents regarding the METNO focal points (ensuring clear distinction to the purpose of the ROBEX focal points) and METNO message header with the next proposed updates to the ROBEX Handbook.

2. DISCUSSION

Timing of METNO message issuance

2.1 The following two paragraphs from 16th edition of ROBEX Handbook contains different descriptions for the timing of METNO message issuance. The General rules of METNO Procedure in Appendix E are consistent with the those for the EUR Region.

13.1. Changes to OPMET Bulletin Procedures

13.1.3. Notification via AFTN/AMHS should be done by means of a METNO message, which is to be sent by the originating ROC to all other ROCs 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 E*.

Appendix E

1. METNO Procedure – General rules

1.5. At 21 days after the preceding (7 days before the upcoming) AIRAC date, the FP shall announce the list of accepted amendments to the ICAO Regional Office, the NOCs by means of a standard formatted METNO message for routine meteorological information sent via Aeronautical Fixed Service (AFS - SADIS and WIFS by their regional associated ROC).

2.2 To avoid the ambiguity in the timing of METNO message issuance and invite readers to refer to Appendix E for the General rules of METNO Procedure as far as possible, the following update to para. 13.1.3 of ROBEX Handbook is proposed. The distribution of METNO to IROGs within the APAC Region and the respective IROGs in the other ICAO regions is also included.

13.1. Changes to OPMET Bulletin Procedures

13.1.3. Notification via AFS ~~AFTN/AMHS~~ should be done by means of a METNO message, which is to be issued ~~sent~~ by the originating ROC to all other ROCs and IROGs within the APAC Region, and to the respective IROGs in the other ICAO regions ~~two weeks prior to the implementation date~~. Each IROG should forward the METNO to their respective partner IROGs in neighboring regions. IROG Singapore and IROGs Tokyo/Nadi should also route the METNO to SADIS and WIFS respectively. The general rules of METNO procedure and the format of the METNO message ~~are~~ ~~is~~ given in *Appendix E*, along with the required timelines for METNO issuance.

Example of METNO message

2.3 An example of a METNO message is no longer available in Appendix E, as it was removed when ROBEX Handbook was updated from 13th to 14th edition. It is proposed to add an example of METNO message back in Appendix E, similar to the one in European METNO procedure (**APPENDIX A** to this paper). The example includes the use of "ADDRPT" and "RMVRPT" for adding for removing aerodromes in the existing OPMET bulletins.

2.4 The proposed update to APAC ROBEX Handbook to add an example for METNO message is provided as Appendix E, para. 2.4 in **APPENDIX B** to this paper for consideration by the meeting. The example of METNO message would serve as a useful reference for ROCs to prepare a correct METNO message.

Sender of METNO message and METNO process

2.5 In the current version of ROBEX handbook (16th Edition, April 2024), the METNO Process Diagram in Section 4 of Appendix E indicated that the sender of METNO is “Regional Focal Point”. The sender of METNO should be the ROC according to the [Version 5 of the Guidelines for the Implementation of IWXXM Exchange](#) (IWXXM Guidelines). It is proposed to replace the METNO Process Diagram to align the sender of METNO and METNO process with the latest version of the IWXXM Guidelines, as shown in **APPENDIX B** Section 4 to this paper.

METNO message header

2.6 The METNO message header described in para. 2.2 in Appendix E is corrected and updated as proposed in **APPENDIX B** to this paper, which is consistent with the METNO message example in para. 2.4.

METNO focal points

2.7 To refine and clarify the purpose of METNO focal points and ensure clear distinction to the ROBEX focal points, relevant updates to paragraphs under Section 1 and Section 3 in Appendix E are proposed, shown in **APPENDIX B** to this paper.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) Note the information contained in this paper; and
- b) review and consider the proposed updates to APAC ROBEX Handbook, including editorial changes, in **Appendix B**.

APPENDIX A

Example of METNO message from [EUR OPMET Data Management Handbook \(13th edition, December 2023\)](#)

11. ATTACHMENT 3 – Syntax of the METNO Message with Example

Item	Example (fictitious): AFS
AMHS Priority	Normal
AMHS Addressees of ROC Centres+ ICAO European Office	C=XX/A=ICAO/P=EG/O=AFTN/OU1=EGZZWPXX C=XX/A=ICAO/P=FRANCE/O=LFLF/OU1=LFLF/CN=LFLFYBYX C=XX/A=ICAO/P=AUSTRIA/O=LOVV/OU1=LOWM/CN=LOWMMXX C=XX/A=ICAO/P=RUSSIA/O=UU/OU1=UUUJYZYA
AMHS Origin	C=XX/A=ICAO/P=BELGIUM/O=EBBR/OU1=EBBB/CN=EBBBYFYX
Abbreviated header	NOBX99 EBBR YYGGgg
Message Identifier (METNO)+ Product Description (EUR OPMET)+ AIRAC Date (YYMMDD)	METNO EUR OPMET YYMMDD
New Bulletin: NEWBUL TTAAii CCCC Locind(s) , or NEWBUL TTAAii CCCC FIR/UIR for Non-Routine bulletin where applicable	NEWBUL FCMJ31 LWSK LWSK LWOH NEWBUL WVCZ31 LKPR LKAA
Delete Bulletin: DELBUL TTAAii CCCC , or DELBUL TTAAii CCCC FIR/UIR for Non-Routine bulletin where applicable	DELBUL FTOS31 LOWM DELBUL WSRA31 ALAK UATT
Add Report to existing Bulletin: ADDRPT TTAAii CCCC Locind(s)	ADDRPT FCTU33 LTAA LTAJ LTCF LTCI LTFH
Remove Report from existing Bulletin: RMVRPT TTAAii CCCC Locind(s)	RMVRPT FCSN31 ESWI ESOW ESSA ESSB ESSP ESSV
End of METNO	END

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GG EBZZYBYX EGZZWPXX LFLFYBYX LOWMMXX LFPSYAYU
121420 EBBBYFYX
NOBX99 EBBR 121420
METNO EUR OPMET 060119
NEWBUL FCMJ31 LWSK LWSK LWOH
NEWBUL WVCZ31 LKPR LKAA
DELBUL FTOS31 LOWM
DELBUL WSRA31 ALAK UATT
ADDRPT FCTU33 LTAA LTAJ LTCF LTCI LTFH
RMVRPT FCSN31 ESWI ESOW ESSA ESSB ESSP ESSV
END
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APPENDIX B

Proposed updates to ICAO APAC ROBEX HANDBOOK – 16th EDITION (Para.13.1.3 and APPENDIX E)

(Editorial note – proposed updates are indicated with ~~strikethrough~~ and highlighted text.)

13.1. Changes to OPMET Bulletin Procedures

13.1.3. Notification via AFS ~~AFTN/AMHS~~ should be done by means of a METNO message, which is to be issued ~~sent~~ by the originating ROC to all other ROCs and IROGs within the APAC Region, ~~and to the respective IROGs in the other ICAO regions two weeks prior to the implementation date.~~ Each IROG should forward the METNO to their respective partner IROGs in neighboring regions. IROG Singapore and IROGs Tokyo/Nadi should also route the METNO to SADIS and WIFS respectively. The general rules of METNO procedure and the format of the METNO message ~~are is~~ given in *Appendix E*, along with the required timelines for METNO issuance.

APPENDIX E – Procedure and Format of METNO bulletin for APAC ROBEX Bulletins

1. METNO Procedure – General rules

1.1. Modification requests to the production of national OPMET-data shall be reported by the NOC (National OPMET Centre) to the Regional OPMET Centre (ROC). The ROC then forwards the requests to the ~~regional Focal point~~ METNO Focal Points (METNO FPs) ~~or regional Team~~ for publication, evaluation and ~~FP~~ processing accepted changes.

1.2. The ~~regional FP or regional Team~~ METNO Focal Points verifies the conformity of the change proposal against ICAO DOC 7910 (only registered Location Indicators can be accepted), ANP Volume II – MET tables, WMO No. 386 documents, and the syntax conforms to the METNO procedure. Implementation of IWXXM data: no IWXXM without TAC will be accepted (when a TAC form is described in Annex 3 / PANS-MET). ~~In addition, separated bulletins will be produced for AOP airport and agreed-exchanged non-AOP airports OPMET data.~~

1.3. Modification requests for an upcoming AIRAC date have to be sent at ~~the latest by the preceding~~ least 28 days before the applicable AIRAC date. This will guarantee that all subsequent steps can be performed in time. ~~For planning purposes, modification requests should be provided well in advance (between 30 and 60 days before the AIRAC date) to~~ and allow full assessment by the ~~regional FP (or regional group in charge of OPMET)~~ METNO Focal Points, ~~and to plus~~ provide confirmation to the originator that all changes will be made at the required date.

1.4. The ~~regional FP~~ ROC will summarize all requests and present those via email to the ~~regional group in charge of OPMET~~ METNO Focal Points at ~~the latest seven days after the preceding AIRAC date~~ least 21 days before the applicable AIRAC date (Section 4 - METNO Process refers).

1.5. ~~The regional group members~~ METNO Focal Points will review the requests and shall communicate any comments to the ~~FP~~ ROC at the latest 14 days after the preceding (14 days before the upcoming) AIRAC date. Nil comments shall be considered as a positive response.

1.6. At 21 days after the preceding (7 days before the upcoming) AIRAC date, the ~~FP~~ ROC shall announce the list of accepted amendments to the ICAO Regional Office, the NOCs by means of a standard formatted METNO message for routine meteorological information sent via Aeronautical Fixed Service (AFS - SADIS and WIFS by their regional associated ROC).

1.7. The involved NOCs, in turn, shall notify users in their State about their requested modifications.

1.8. In addition, ~~regional contacts (as agreed during regional MET meetings)~~ ROBEX Focal Points

(Appendix I to the ROBEX Handbook) will receive a confirmation by email. Motivated subscription to (or to unsubscribe from) the METNO Bulletins can be submitted via the ~~regional MET Group METNO Focal Points~~ or directly by utilizing the contact form provided on the regional Website (where available).

1.9. The modifications shall be implemented by all affected centres on AIRAC date, at 02:00 UTC or when a new bulletin header is created, on opening hours the day before the implementation date.

1.10. The AIRAC OPMET data updates shall be applied by: The ROCs and IROGs for routing the current OPMET data in accordance with the regional dissemination Schema.

1.11. In order to avoid difficulties in processing OPMET Data modifications during major holidays, it can be decided to skip a particular AIRAC Cycle occurring in these periods.

1.12. For urgent modification, it can be decided with the explicit agreement of the ~~regional METNO focal point/regional team METNO Focal Points~~ to proceed more quickly by a deviation to the normal schedule. The ~~FP/regional team ROC~~ will compile a ~~AIRAC METNO, or EXTRA-METNO~~ for intermediate updates with immediate implementation of new or expiring bulletins.

1.13. Key issues to be considered for the management of AFS data traffic volumes are:

- Avoid data duplication
- Authenticated data only
- ANP required data (AOP)
- Agreed exchanged Non-AOP data

~~1.14. Standardized Regional OPMET Data Catalogues, including METNO registered data, can be compiled from the database of METNO registered OPMET data: TAC & IWXXM, on AFS:~~

- ~~- Regional OPMET Database (RODB) catalogue~~
- ~~- Regional and Global OPMET data catalogues~~

2. Format and Content of the METNO-message

2.1. The METNO Syntax: The syntax of a METNO statement is presented hereafter in para. 2.4 below. It may also include the list of AFS addressees actually used as well as examples for the various OPMET data update METNO statements.

2.2. The METNO Header: The header of the METNO bulletin is **NOA₁A₂99 CCCC YYGGgg NOXX31 CCCC YYGGgg**, where:

- A₁A₂ is a general area/country designator of the METNO issuing centre (i.e. ROC), as included in WMO No. 386 *Manual on the Global Telecommunication System*. ~~XX is a general area designator (example: EU for EUR, AF for AFI...).~~ According to [Table C1 of WMO No.386 \(Note 4\)](#), for the geographical designator in the abbreviated heading of the METNO messages, XX should be used.
- CCCC is the ~~AFTN ICAO~~ location indicator of the METNO issuing centre ~~regional FP-Centre (example: EBBR for EUR)~~

2.3. The METNO statements for registration and updating of OPMET / IWXXM data are:

- ADDRPT/RMVRPT: for adding/removing Routine OPMET data in an already registered bulletin
- NEWBUL/DELBUL: for registering a new/unregistering an expiring (Non-)Routine OPMET bulletin and its contained data

2.3.1. ADDRPT

2.3.1.1. This statement is used when a new location indicator is added to an already METNO registered bulletin. It can be used for inserting METAR- or TAF-reports in an existing and registered bulletin ~~in combination with METAR or TAF bulletins.~~

2.3.1.2. Adding TAC-formatted METARs/TAFs to a registered bulletin does not automatically register the IWXXM equivalent data. ~~TAC data can exist without an IWXXM until November 2020.~~

2.3.1.3. Adding IWXXM METARs/TAFs to a registered bulletin will, ~~by default,~~ no longer result in adding the equivalent TAC METARs/TAFs for their parallel distribution. The addition of TAC METARs/TAFs to a registered bulletin must be separately advised. ~~There can be no IWXXM data without any equivalent TAC formatted version of the data.~~

2.3.2. RMVRPT

2.3.2.1. This statement is used for METARs/TAFs planned to be removed from an already registered bulletin. Removed reports can possibly be registered for all locations in other existing or in newly registered bulletins.

2.3.2.2. Removing TAC-formatted METARs/TAFs from a registered bulletin will also remove the equivalent IWXXM data from the OPMET data register in case it has already been registered. There is no IWXXM data without equivalent TAC-formatted data (when a TAC form is described in Annex 3 / PANS-MET). Removing IWXXM METARs/TAFs will ~~by default no longer~~ result in removing equivalent TAC METARs/TAFs from the OPMET data register. ~~If the TAC data need to be continued, it has to be re-registered explicitly, using ADDRPT.~~

2.3.3. NEWBUL

2.3.3.1. This statement is used for the registration of a new bulletin. It can be used for all supported data.

2.3.3.2. The registration of a new IWXXM bulletin ~~by default no longer~~ implies the introduction of the TAC equivalent.

2.3.3.3. The registration of a new TAC OPMET bulletin does not automatically trigger the registration of an IWXXM bulletin equivalent.

2.3.4. DELBUL

2.3.4.1. This statement is used for the deletion of a registered bulletin. It can be used for all supported data types.

2.3.4.2. The deletion of a registered IWXXM bulletin ~~no longer~~ automatically implies the deletion of the TAC equivalent (as appropriate). ~~TAC equivalents that are meant to be continued have to be re-introduced explicitly by applying NEWBUL.~~

2.3.4.3. Deletion of a TAC OPMET bulletin, by default, also deletes the IWXXM equivalent.

2.4. METNO message format (Example)

Item	Example (fictitious): AFS
AMHS Priority	Normal
AMHS Addressees of ROCs and RODBs	C=XX/ADMD=ICAO/PRMD=CHINA/O=HQ/OU1=ZBBB/CN=ZBBBYPYX/ C=XX/ADMD=ICAO/PRMD=VC/O=AFTN/OU1=VCCCCPYX/ C=XX/ADMD=ICAO/PRMD=INDIA/O=VIDD/OU1=VIDP/CN=VIDPPYX/ C=XX/ADMD=ICAO/PRMD=HONGKONG/O=HKGCAD/OU1=VHZZ/CN=VHZZYPYX/ C=XX/ADMD=ICAO/PRMD=REP-KOREA/O=RKSS/OU1=RKSI/CN=RKSIYPYX/

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	C=XX/ADMD=ICAO/PRMD=INDONESIA/O=WIII/OU1=WIZZ/CN=WIZZYPYX/ C=XX/ADMD=ICAO/PRMD=INDIA/O=VECC/OU1=VECC/CN=VECCYPYX/ C=XX/ADMD=ICAO/PRMD=OP/O=AFTN/OU1=OPZZYPYX/ C=XX/ADMD=ICAO/PRMD=MALAYSIA/O=WM/OU1=WMZZ/CN=WMZZYPYR/ C=XX/ADMD=ICAO/PRMD=INDIA/O=VABB/OU1=VABB/CN=VABBYPYX/ C=XX/ADMD=ICAO/PRMD=NZ/O=NZCH/OU1=NZZZ/CN=NZZZYPYX/ C=XX/ADMD=ICAO/PRMD=THAILAND/O=VTBB/OU1=VTBB/CN=VTBBYPYX/ C=XX/ADMD=ICAO/PRMD=AUSTRALIA/O=YBBN/OU1=YBBB/CN=YBBBYPYX/ C=XX/ADMD=ICAO/PRMD=FIJI/O=NFFN/OU1=NFFN/CN=NFFNYPYX/ C=XX/ADMD=ICAO/PRMD=SINGAPORE/O=CAASG/OU1=WSZZ/CN=WSZZYPYX/ C=XX/ADMD=ICAO/PRMD=RJ/O=AFTN/OU1=RJTDYPYX/
AMHS Origin	C=XX/ADMD=ICAO/PRMD=SINGAPORE/O=CAASG/OU1=WSSS/CN=WSSSYPYX/
Abbreviated header	TTAA99 CCCC YYGggg Example: NOXX99 WSSS 180200
Message Identifier (METNO) + Product Description (APAC OPMET) + AIRAC Date (YYMMDD)	METNO APAC OPMET 240321
New Bulletin: NEWBUL TTAAii CCCC Locind(s) , or NEWBUL TTAAii CCCC FIR/UIR for Non-Routine bulletin where applicable	NEWBUL FTSR33 WSSS WBSB WBGB WBGG WBGR WBGS WBKK WBKL WBKS WBKW
Delete Bulletin: DELBUL TTAAii CCCC , or DELBUL TTAAii CCCC FIR/UIR for Non-Routine bulletin where applicable	DELBUL FTSR34 WSSS
Add Report to existing Bulletin: ADDRPT TTAAii CCCC Locind(s)	ADDRPT FTSR31 WSSS WAAA WABB WIMM ADDRPT FTSR32 WSSS WMKJ WMKK WMKL WMKM WMKP WMSA
Remove Report from existing Bulletin: RMVRPT TTAAii CCCC Locind(s)	RMVRPT FTSR31 WSSS WMKK WMSA WMKP WMKJ RMVRPT FTSR32 WSSS WBSB WBKK WBGG WIMM
End of METNO	END

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GG ZBBBYPYX VCCCPYX VIDPYPYX VHZZYPYX RKSIIYPYX WIZZYPYX VECCYPYX
OPZZYPYX WMZZYPYR VABBYPYX NZZZYPYX VTBBYPYX YBBBYPYX NFFNYPYX
WSZZYPYX RJTDYPYX
180200 WSSSYPYX
NOXX99 WSSS 180200
METNO APAC OPMET 240321
NEWBUL FTSR33 WSSS WBSB WBGB WBGG WBGR WBGS
WBKK WBKL WBKS WBKW
DELBUL FTSR34 WSSS
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
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3. METNO Focal Point – Prerequisites and Actions

3.1. The METNO Focal Points and team for management of the METNO process include the ICAO

Regional Officer and ROBEX Focal Points from Australia, Hong Kong China, Japan and Singapore (Appendix I to the ROBEX Handbook).

3.2. The METNO Focal Point (METNO FPs)/regional group prerequisites are:

- Generic email address (including METNO FP persons and backups)
- AFS connection address
- Access to ICAO references (documents and Regional contacts)
- Data management software for processing basic lists of METNO-registered data to be shared inter-regionally in standardized international data formats (*.csv, *.txt)

3.3. The METNO FPs/regional group receives update requests any time by email:

- Preferably via ROC, but also from NOCs
- After authentication, sort updates based on the suggested implementation date (AIRAC date if no date proposed)
- ~~Compiles AIRAC METNO or EXTRA METNO for intermediate updates with immediate implementation of new or expiring bulletins~~

3.4. Forward requests for ANP additional OPMET data via email to the Regional ICAO Office contact.

3.5. Co-ordination and evaluation of received update requests via email.

~~3.6. Compilation of AIRAC / EXTRA METNO bulletin for distribution to regional ROCs / IROGs.~~

3.7. Maintenance of regional METNOs and registered OPMET data.

3.8. Reports to ~~OPMET regional group~~ APAC MET/IE WG.

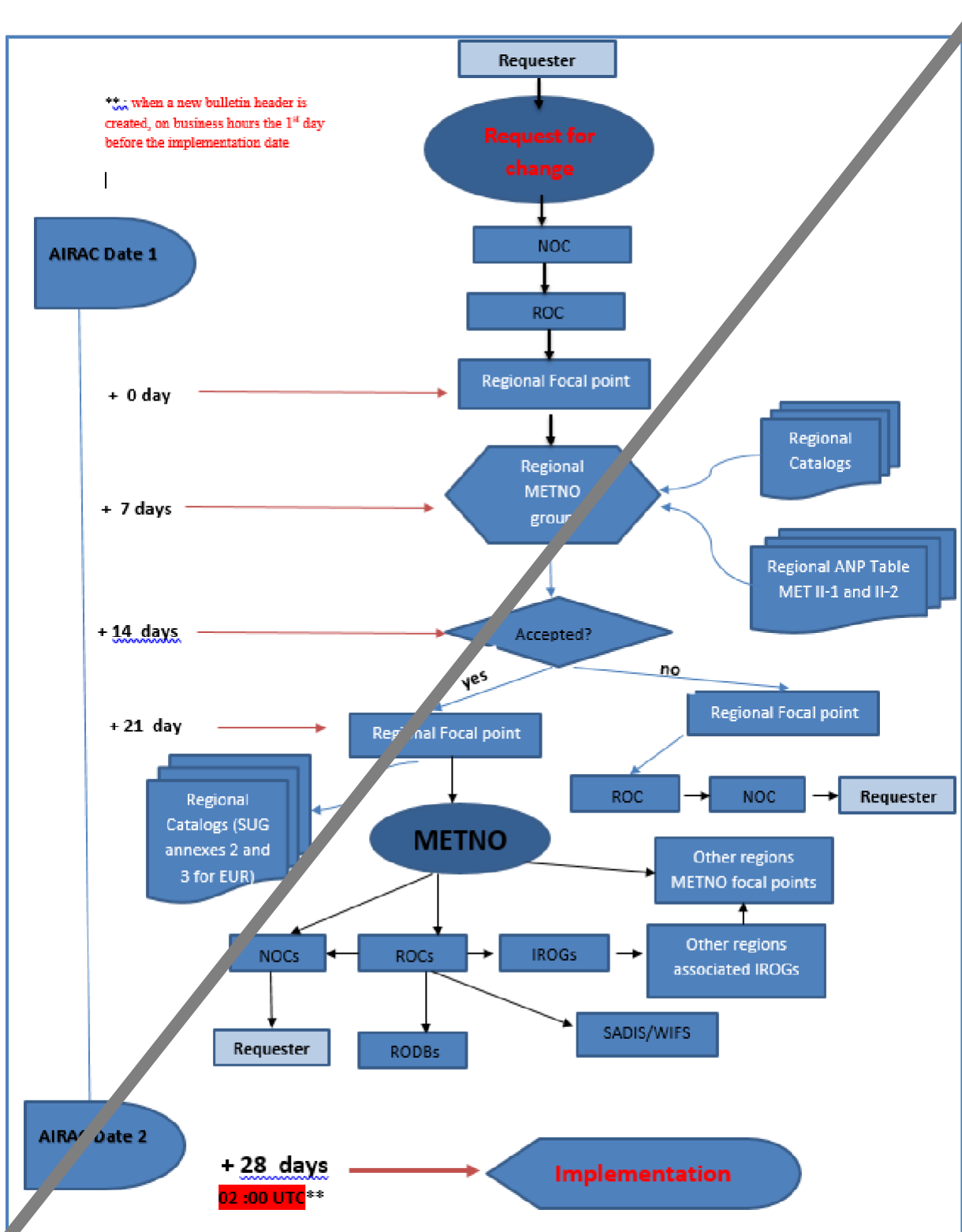
~~3.9. Facilitates OPMET data monitoring.~~

~~3.10. The regional focal point and team for management of the METNO process would include the relevant ICAO Regional Officer and ROBEX Focal Points from Australia, Hong Kong, China, Japan and Singapore.~~

4. METNO Process Diagram

Lead time	Action	Subsequent activity/ additional notes
>28 days	NOCs wishing to make changes send planned changes to ROC	Via email
28 days	ROC collect changes in their area	usually by email/AFS
21 days	ROC sends collated changes to METNO FPs	METNO FPs reviews changes and shares with their regional group (usually RODBs & ROCs), usually by email/AFS
7 days	ROCs provide the AFS routing (addressing) of newly METNO registered OPMET bulletins (TTAAii CCCC) to the: 1) ROCs within its Area of Responsibility	At this point the changes in the METNO are fixed as systems will start making changes in anticipation.

	<p>2) NOCs within its Area of Responsibility</p> <p>and when data is eligible for inter-regional distribution</p> <p>3) inter-regional IROGs within its Area of Responsibility.</p> <p>IROGs distribute the METNO to neighbouring IROGs and SADIS/WIFS as required.</p>	
Day 0	Operational changes go live	This must be on an AIRAC date



— END OF SECTION —