International Civil Aviation Organization

FOURTEENTH MEETING OF THE ASIA/PACIFIC METEOROLOGICAL INFORMATION EXCHANGE WORKING GROUP (MET/IE WG/14)

Bangkok, Thailand, 7 – 9 March 2016

Agenda Item 6: **Guidance material related to meteorological information exchange**

ROBEX HANDBOOK UPDATES

(Presented by the Secretariat)

SUMMARY

This paper presents draft updates (or amendments) to the Regional OPMET Bulletin Exchange (ROBEX) Handbook for review by the MET/IE WG.

1   INTRODUCTION

1.1   Improved availability and reliability of the required operational meteorological (OPMET) information is needed to support flight planning (efficiency) and in-flight re-planning (safety). In the Asia/Pacific Region, the Regional OPMET Bulletin Exchange (ROBEX) Handbook is provided as regional guidance material to support the optimization of OPMET exchange under the ROBEX scheme. As such, the ROBEX Handbook provides guidance to define the responsibilities and procedures for the ROBEX centres, including the content and format of the ROBEX bulletins.

1.2   The MET/IE WG, formerly the ROBEX WG, conducts a regular review and prepares proposals for updating or amending the ROBEX Handbook to support the optimization of the ROBEX scheme.

1.3   Based on advice from the MET/IE WG and MET SG, the ROBEX Handbook is published and kept up-to-date by the ICAO Asia and Pacific Office (in coordination with ICAO MID Office for issues related to the exchange of OPMET between the ICAO APAC and MID Regions).

1.4   This paper presents draft amendments to the ROBEX Handbook for review by the meeting.

2   DISCUSSION

Recent amendments published in the ROBEX Handbook

2.1   The most recent amendments to the ROBEX Handbook were published on 1 October 2015 and 3 December 2015. The latest version of the ROBEX Handbook (3 December 2015) is

available on the ICAO Asia and Pacific Office web site (www.icao.int/APAC) by following the link to eDocuments and scrolling down to MET.

2.2   The ROBEX Handbook amendments published on 1 October 2015 incorporated several changes, which were proposed by States, the (former) ROBEX WG and the MET SG since May 2013 and finally endorsed by APANPIRG/26 in September 2015 *[APANPIRG/26 Conclusion 26/60 and ICAO letter Ref.: T 4/8.3.2 & T 4/10.2: AP155/15 (MET), dated 6 October 2015, refer]*.

2.3   The ROBEX Handbook amendments published on 3 December 2015 incorporated subsequent changes proposed by India to reflect current requirements for OPMET at some locations in India *[ICAO email; Subject: Re: Updated Guidance Material - ROBEX Handbook and ICD, dated 8 December 2015, refers]*.

New, draft amendments to the ROBEX Handbook

2.4   To address the issues raised by ROBEX WG/13 in Decision 13/2 – *Standardization and optimization of OPMET monitoring and presentation of the results*, the following preliminary draft amendments are provided:

2.4.1   To address ROBEX WG/13 in Decision 13/2 part a) *Ensure the frequency at which OPMET messages are monitored is in alignment with the OPMET issuance times required by regional agreement (e.g., the frequency of issuance of [routine] METAR is one hour and TAF is six hours)*, insert the following sentence in Example 1 in Appendix H of the ROBEX Handbook:

> Bulletin SAIN33 includes 6 aerodromes: VECC, VEPT, VGHS, VGEG, VNKT and VQPR. For each aerodrome, the No. of reports required for a bulletin equals 2*24 = 48 reports, because the official observation time of the bulletins is at every hour and half-hour (i.e., HH+00 and HH+30) resulting in 2 reports for each of the 24 hours in each day. If only on the 2nd of March, RODB does not receive reports from one aerodrome. Calculate the compliance index for Bulleting SAIN33 in March.?

2.4.2   To address ROBEX WG/13 in Decision 13/2 part b) *Enable future OPMET monitoring exercises (e.g., in 2015/2016) to include the monitoring of SIGMET issuance, which may target specific problems such as seasonal/geographical phenomena (e.g., tropical cyclone) and known 'SIGMET-deficient' areas*, insert the following paragraph in the text part of the ROBEX Handbook after paragraph 12.3.2.2:

> 12.3.2.x   Additional monitoring of SIGMET issuance may be scheduled as necessary to monitor the issuance of SIGMET in specific FIRs over specific periods where such monitoring would be useful to support the rectification of deficiencies in the provision of SIGMET services.

2.4.3   To address ROBEX WG/13 in Decision 13/2 part c) *Provide additional data in OPMET monitoring reports such as the actual number of messages received per day at locations where OPMET availability is considered not satisfactory (i.e., where the number of messages received does not meet a given threshold for the number of messages expected)*; part d) *Encourage easily comparable and interpretable data and presentation of results in the OPMET monitoring reports from the various OPMET monitoring entities (i.e., IATA and RODBs)*; and part e) *Clarify the baseline list of locations to which OPMET monitoring should be applied (i.e., SADIS User Guide or FASID Tables MET)*, insert the following paragraphs in the text part of the ROBEX Handbook after paragraph 12.3.2.3:

12.3.x   Reporting OPMET monitoring results

12.3.x.x   OPMET monitoring reports should provide data for all locations where OPMET is required (i.e., locations in RANP Table MET II-1 and Table MET II-2) and additional locations where States have been consulted and agreed to provide this additional information (i.e., locations in SUG Annex 1).

12.3.x.x   OPMET monitoring reports should provide sufficient data to help States identify problems in OPMET issuance, e.g., the actual number of messages received per day at locations where OPMET monitoring identifies that the number of messages received does not meet a given percentage of the total number of messages expected.

12.3.x.x   Reports of the results of OPMET monitoring conducted in accordance with the guidelines in this Handbook should be presented in a format that enables ease of comparison between the reports from the various designated OPMET monitoring entities (e.g., IATA and RODBs) and ease of interpretation of the data by States and users concerned.

2.5   To address ROBEX WG/13 in Decision 13/3 – *Alignment of ROBEX OPMET bulletins*, which proposes the realignment of locations in the correspondingly labelled bulletins for the collection and dissemination of METAR (SA) and TAF (FT) under the ROBEX scheme, preliminary draft amendments to the OPMET Bulletins in Table A and Table B of the ROBEX Handbook are provided at the **Attachment** to this paper.

2.5.1   It is noted that the following corresponding pairs of SA/FT bulletins are already aligned with respect to the locations contained within and, therefore, are not proposed to be changed in this paper:

- ROBEX Centre Beijing: SACI31/FTCI31, SACI32/FTCI32 and SACI41/FTCI41;

- ROBEX Centre Brisbane: SAAU31/FTAU31, SAAU32/FTAU32, SAAU33/FTAU33, SAAU34/FTAU34, SAAU35/FTAU35 and FTTM31;

- ROBEX Centre Hong Kong: SAHK31/FTHK31;

- ROBEX Centre Incheon: SAKO31/FTKO31;

- ROBEX Centre Karachi: SAPK31/FTPK31; and

- ROBEX Centre Wellington: SANZ31/FTNZ31;

2.5.2   It is also noted that, in WP/05 to MET/IE WG/14, Thailand has addressed the re-alignment of SA/FT bulletins compiled by ROBEX Centre Bangkok (i.e., SAAE31/FTAE31, SAAE32/FTAE32, SAAE33/FTAE33, SAAE34/FTAE34, SATH31/FTTH31, SATH32/FTHT32 and SATH33/FTTH33) and, therefore, the re-alignment of the bulletins compiled by ROBEX Centre Bangkok is not addressed in this paper.

2.5.3   Furthermore, the proposal in this paper does not provide for the re-alignment of the ROBEX bulletins compiled by ROBEX Centres Jakarta, Kuala Lumpur and Singapore (i.e., SAIN31,

SAIN32, SAIN33, SAMS31, SAMS38, FTSR31, FTSR32 and FTSR33), which will require further coordination with the ROBEX Centres concerned.

2.5.4   The amendments proposed at the **Attachment** to this paper are intended to re-align the locations in the following corresponding pairs of SA/FT bulletins:

- ROBEX Centre Brisbane: SANG31/FTNG31;

- ROBEX Centre Colombo: SASB31/FTSB31(new);

- ROBEX Centres Colombo/Mumbai: SAMV31(new)/FTMV31(new);

- ROBEX Centres Delhi/Kolkata/Mumbai: SAIN31/FTIN31, SAIN32/FTIN32 and SAIN33(retired);

- ROBEX Centres Kolkata/Bangkok: SABW31(new)/FTBW31(new);

- ROBEX Centre Kolkata: SAAS31(new)/FTAS31(new);

- ROBEX Centre Nadi: SAPS31/FTPS31 and SAPS32; and

- ROBEX Centre Tokyo: SAJP31/FTJP31, SAJP32/FTJP32 and SAJP38/FTJP38.

2.6   ROBEX WG/13 in Decision 13/6 – *ROBEX Handbook revisions*, proposed that revisions be drafted to the ROBEX Handbook to: (a) clearly define the procedure for OPMET data to be relayed to the SADIS and WIFS gateways under the ROBEX scheme; and (b) eliminate unnecessary duplication of information in both the ROBEX Handbook and ICD.

2.6.1   With respect to ROBEX WG/13 Decision 13/6, part (a), it is noted that the ROBEX Handbook, paragraph 4.1.6, already requires that "*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*".

2.6.2   Furthermore, the ROBEX scheme diagram on page 8 of the ROBEX Handbook indicates linkages from RODB Singapore to the SADIS gateway and from RODB Tokyo to the WIFS gateway.

2.6.3   To further clarify the path for OPMET data to be relayed to the SADIS and WIFS gateways under the ROBEX scheme, the following paragraph is proposed to be inserted in the ROBEX Handbook after paragraph 11.4:

> 11.5   In order to ensure the global availability of all ROBEX bulletins at the SADIS/Secure SADIS FTP and WIFS gateways, the IROG Singapore should arrange for relaying of all Asia/Pacific bulletins to the SADIS/Secure SADIS FTP gateway (London) and the IROG Tokyo should arrange for relaying of all Asia/Pacific bulletins to the WIFS gateway (Washington).

2.7   The proposal in this paper does not fully address the issue raised in ROBEX WG/13 Decision 13/6, part (b), which will require further coordination with the users.

3.   ACTION REQUIRED BY THE MEETING

3.1   The meeting is invited to:

a) note the information contained in this paper and discuss any relevant matters as appropriate;

b) review and revise, as necessary, the proposals provided in this paper for amendment of the ROBEX Handbook;

c) adopt the proposals provided in this paper as the basis for a draft amendment of the ROBEX Handbook to be forwarded to the MET SG for final review and possible endorsement.

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PROPOSED AMENDMENTS TO RE-ALIGN THE LOCATIONS WITHIN ROBEX BULLETINS

TABLE A		TABLE B	
SANG31		**FTNG31**	
AYPY	PORT MORESBY Intl	AYPY	PORT MORESBY Intl
AYWK	WEWAK	*AYWK*	*WEWAK*
AYVN	VANIMO	AYVN	VANIMO
AYNZ	NADZAB	AYNZ	NADZAB
AYMH	MOUNT HAGEN	*AYMH*	*MOUNT HAGEN*
AYGN	GURNEY	–	–
AYMO	MOMOTE	*AYMO*	*MOMOTE*
ANYN	NAURU I.	ANYN	NAURU I.
AGGH	HONIARA (HENDERSON)	AGGH	HONIARA (HENDERSON)
SASB31		**FTSB31**	
VCBI	BANDARANAIKE INTL AP COLOMBO	VCBI	BANDARANAIKE INTL AP COLOMBO
VCRI	MATTALA RAJAPAKSA INTERNATIONAL AIRPORT	VCRI	MATTALA RAJAPAKSA INTERNATIONAL AIRPORT
VCCH	HINGURAKGODA/MINNERIYA	–	–
~~VRMM~~	~~MALE/Intl~~	–	–
SAMV31		**FTMV31**	
VRMG	GAN INTERNATIONAL AIRPORT	VRMG	GAN INTERNATIONAL AIRPORT
VRMH	HANIMAADHOO INTERNATIONAL AIRPORT	VRMH	HANIMAADHOO INTERNATIONAL AIRPORT
VRMM	MALE INTERNATIONAL AIRPORT	VRMM	MALE INTERNATIONAL AIRPORT
SAIN31		**FTIN31**	
VAAH	AHMEDABAD	VAAH	AHMEDABAD
VABB	MUMBAI/Chhatrapati Shivaji Intl.	VABB	MUMBAI/Chhatrapati Shivaji Intl.
VANP	NAGPUR	VANP	NAGPUR
VOBL	BANGALORE INTL APT	VOBL	BANGALORE INTL APT
VOCB	COIMBATORE	VOCB	COIMBATORE
VOCI	COCHIN INTERNATIONAL	VOCI	COCHIN INTERNATIONAL AIRPORT
VOCL	CALICUT	VOCL	CALICUT
VOHS	HYDERABAD	VOHS	HYDERABAD INTERNATIONAL AIRPORT
VOHY	*HYDERABAD*	*VOHY*	*HYDERABAD*
VOML	MANGALORE	VOML	MANGALORE
VOMM	CHENNAI	VOMM	CHENNAI
VOTR	TIRUCHCHIRAPPALLI	VOTR	TIRUCHCHIRAPPALLI
VOTV	TRIVANDRUM	VOTV	TRIVANDRUM
–	–	~~VEBN~~	~~VARANASI~~
–	–	~~VECC~~	~~NETAJI SUBHASH CHANDRA BOSE INTL AP, Kolkata~~
–	–	~~VEGT~~	~~Guwahati~~
–	–	~~VEGY~~	~~Gaya~~
–	–	~~VEPT~~	~~PATNA~~
–	–	~~VIAR~~	~~AMRITSAR~~
–	–	~~VIDP~~	~~DELHI/Indira Gandhi Intl~~
–	–	~~VIJP~~	~~JAIPUR~~
–	–	~~VILK~~	~~LUCKNOW~~
SAIN32		**FTIN32**	
VIDP	DELHI/Indira Gandhi Intl	VIDP	DELHI/Indira Gandhi Intl

TABLE A		TABLE B	
VEBN	VARANASI	VEBN	VARANASI
VIAR	AMRITSAR	VIAR	AMRITSAR
VIJP	JAIPUR	VIJP	JAIPUR
VILK	LUCKNOW	VILK	LUCKNOW
–	–	VCBI	BANDARANAIKE INTL AP COLOMBO
–	–	VCRI	MATTALA RAJAPAKSA INTERNATIONAL AIRPORT
–	–	VNKT	KATHMANDU
–	–	VRMG	GAN INTERNATIONAL AIRPORT
–	–	VRMM	MALE INTERNATIONAL AIRPORT
–	–	VOBL	BANGALORE INTL APT
–	–	VOCB	COIMBATORE
–	–	VOCI	COCHIN INTERNATIONAL AIRPORT
–	–	VOCL	CALICUT
–	–	VOHS	HYDERABAD INTERNATIONAL AIRPORT
–	–	VOHY	HYDERABAD
–	–	VOML	MANGALORE
–	–	VOMM	CHENNAI
–	–	VOTR	TIRUCHCHIRAPPALLI
–	–	VOTV	TRIVANDRUM
SAIN33		–	
VGHS	HAZRAT SHAHJALAL INTERNATIONAL AIRPORT	–	–
VNKT	KATHMANDU	–	–
VQPR	PARO/Intl.	–	–
VECC	NETAJI SUBHASH CHANDRA BOSE INTERNATIONAL AIRPORT, KOLKATA	–	–
VEGT	GUWAHATI	–	–
VEGY	GAYA	–	–
VEPT	PATNA	–	–
SABW31		FTBW31	
VGEG	M.A. HANNAN INTL. CHITTAGONG	VGEG	M.A. HANNAN INTL. CHITTAGONG
VGHS	HAZRAT SHAHJALAL INTERNATIONAL AIRPORT	VGHS	HAZRAT SHAHJALAL INTERNATIONAL AIRPORT
VGSY	OSMANI INTERNATIONAL AIRPORT,SYLHET	VGSY	OSMANI INTERNATIONAL AIRPORT,SYLHET
SAAS31		FTAS31	
VNKT	KATHMANDU	VNKT	KATHMANDU
VQPR	PARO/Intl.	–	–
SAPS31		FTPS31	
NCRG	RAROTONGA Intl.	NCRG	RAROTONGA Intl.
NFFN	NADI/Intl	NFFN	NADI/Intl
NFNA	NAUSORI/Intl	NFNA	NAUSORI/Intl
NFTF	FUA'AMOTU INTL.	NFTF	FUA'AMOTU INTL.
NFTV	VAVA'U	NFTV	VAVA'U
NGFU	FUNAFUTI/Intl	NGFU	FUNAFUTI/Intl
NGTA	TARAWA/Bonriki Intl	NGTA	TARAWA/Bonriki Intl
NIUE	NIUE Intl	NIUE	NIUE Intl
NLWW	WALLIS HIHIFO	NLWW	WALLIS HIHIFO

TABLE A		TABLE B	
NSFA	FALEOLO/Intl	NSFA	FALEOLO/Intl
NSTU	PAGO PAGO Intl, Tutuila I.	NSTU	PAGO PAGO Intl, Tutuila I.
NTAA	TAHITI FAAA	NTAA	TAHITI FAAA
NVSS	SANTO/Pekoa	NVSS	SANTO/Pekoa
NVVV	PORT VILA/Bauerfield	NVVV	PORT VILA/Bauerfield
NWWW	NOUMEA LA TANTOUTA	NWWW	NOUMEA LA TANTOUTA
PLCH	CHRISTMAS ISLAND	PLCH	CHRISTMAS ISLAND
SAPS31		**–**	
NFTF	FUA'AMOTU Intl.	–	–
NFTL	HA'APAI	–	–
NFTV	VAVA'U	–	–
NLWW	WALLIS HIHIFO	–	–
NVSS	SANTO/Pekoa	–	–
NVVV	PORT VILA/Bauerfield	–	–
SAJP31		**FTJP31**	
RJAA	NARITA Intl	RJAA	NARITA Intl
RJBB	KANSAI Intl	RJBB	KANSAI Intl
RJCH	HAKODATE	RJCH	HAKODATE
RJGG	CHUBU CENTRAIR Intl	RJGG	CHUBU CENTRAIR Intl
RJOO	OSAKA Intl	RJOO	OSAKA Intl
RJSS	SENDAI	RJSS	SENDAI
RJTT	TOKYO Intl	RJTT	TOKYO Intl
ROAH	NAHA	ROAH	NAHA
SAJP32		**FTJP32**	
RJCC	SAPPORO/New Chitose	RJCC	SAPPORO/New Chitose
RJCH	HAKODATE	–	–
RJFF	FUKUOKA	RJFF	FUKUOKA/Fukuoka
RJFK	KAGOSHIMA	RJFK	KAGOSHIMA
RJFO	OITA	RJFO	OITA
RJFT	KUMAMOTO	RJFT	KUMAMOTO
RJFU	NAGASAKI	RJFU	NAGASAKI
–	–	RJGG	CHUBU CENTRAIR INTL
RJNK	KANAZAWA/Komatsu	RJNK	KANAZAWA/Komatsu
RJNT	TOYAMA	RJNT	TOYAMA
RJOA	HIROSHIMA	RJOA	HIROSHIMA
RJOB	OKAYAMA	RJOB	OKAYAMA
RJOT	TAKAMATSU	RJOT	TAKAMATSU
RJSN	NIIGATA	RJSN	NIIGATA
RJSS	SENDAI	–	–
SAJP38		**FTJP38**	
RJAH	HYAKURI	RJAH	HYAKURI
RJCB	OBIHIRO	RJCB	OBIHIRO
RJCK	KUSHIRO	RJCK	KUSHIRO
RJCM	MEMANBETSU	RJCM	MEMANBETSU
RJEC	ASAHIKAWA	RJEC	ASAHIKAWA (civil)
RJFM	MIYAZAKI	RJFM	MIYAZAKI
RJFR	NEW KITAKYUSHU	RJFR	NEW KITAKYUSHU
RJFS	SAGA	RJFS	SAGA
RJNK	KANAZAWA/Komatsu	–	–
RJNS	SHIZUOKA	RJNS	SHIZUOKA

TABLE A		TABLE B	
~~RJNT~~	~~TOYAMA~~	–	–
RJOC	IZUMO	RJOC	IZUMO
RJOH	MIHO	RJOH	MIHO
RJOK	KOCHI	RJOK	KOCHI
RJOM	MATSUYAMA	RJOM	MATSUYAMA
RJSA	AOMORI	RJSA	AOMORI
RJSF	FUKUSHIMA	RJSF	FUKUSHIMA
RJSK	AKITA	RJSK	AKITA
ROIG	ISHIGAKI JIMA	ROIG	ISHIGAKI JIMA