INTERNATIONAL CIVIL AVIATION ORGANIZATION
ASIA AND PACIFIC OFFICE

REPORT OF

THE FIRST RODB COORDINATION MEETING

9 – 10 April 2007

Meteorological Services Division
Changi Airport, Singapore

I. History

1 Introduction

The First RODB Coordination Meeting was held at the Main Meteorological Office of Meteorological Services Division of the National Environment Agency (NEA) of Singapore, Changi Airport, from 9 to 10 April 2007.

2 Attendance

The meeting was attended by experts from RODBs Bangkok, Tokyo and Singapore and ICAO Regional Office. The meeting was also attended by representatives of the Civil Aviation Administration of Singapore and the Meteorological Service. The List of Participants is provided in **Appendix A** to the report.

3 Opening of the meeting

3.1 Participants were welcomed by Mr. Lam Ken Gaik on behalf of the Meteorological Services Division of NEA. He also presented the working arrangements for the meeting.

3.2 Mr. Dimitar Ivanov, RO/MET Bangkok thanked Singapore for kindly accepting to host the meeting and provided a brief overview of the objectives and expected outcomes. He suggested that, in view of the very short duration of the meeting, it should be conducted in a very informal manner.

4 Agenda of the Meeting

The agenda adopted by the meeting was as follows:

Agenda Item 1:	Review the operations of the RODBs
Agenda Item 2:	Measures to minimize OPMET data shortfalls
Agenda Item 3:	Status of mirroring of RODB content
Agenda Item 4:	Progress with ASIA/PAC OPMET Data Catalogue
Agenda Item 5:	Relaying ASIA/PAC OPMET Data to SADIS and ISCS and harmonization of OPMET data on SADIS and ISCS
Agenda Item 6:	SIGMET Tests – future plans
Agenda Item 7:	Harmonization of monitoring and quality control procedures
Agenda Item 8:	Any other business

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II. Report on Agenda Items

Agenda Item 1: Review of the operation of RODBs

1.1 RODB Singapore

1.1.1. Chua informed of the plan to introduce web based access to the RODB Sinapore in addition to (or as a replacement of) the existing FTP service. This will give the users additional functionalities like searching the DB for particular bulletins or messages through simple and user-friendly interface. It was planned to introduce this service in September 2007.

1.1.2. The meeting appreciated the initiative by RODB Singapore. More information will be presented by Singapore at the OPMET/M TF meeting in June in Bangkok.

1.1.3. The meeting discussed further the authorized access to the web service. While it was clear the all RODBs and ROBEX centres will be given access, Dimitar was asked to clarify whether authorized access should be given to the users (airlines).

1.2 RODB Tokyo

1.2.1. Kunio informed that there were no major changes in the operation of RODB Tokyo and no plans at the moment for providing alternative access to AFTN. He informed also that their system will be modernized in 2008.

1.3 RODB Bangkok

1.3.1. Vethis and Thavit informed that currently Aerothai was considering a new AMHS system and at this moment it was not clear how the RODB functions would be performed by the new system. The concern was that, while the current system was developed internally and, therefore, they had full control on the software, a new turn-key system (if this was the decision of Aerothai management) would be much more difficult to modify and introduce any software changes.

Agenda Item 2: Measures to minimize OPMET data shortfalls

2.1 The meeting reviewed results of recent monitoring of OPMET data flow and discussed the most significant shortfalls, as follows.

2.1.1 Indonesia

2.1.1.1 It was recalled that Indonesia had proposed new METAR bulletins SAID31, 32 and 33 to include all required AOP aerodromes in Indonesia. However, the monitoring results showed that these bulletins have not yet been implemented; normally there were only 3 – 4 Indonesian METARs regularly exchanged. RODB Bangkok informed that they were receiving Indonesian METARs more regularly. RODB Singapore was to contact Indonesia and advise on correct AFTN address for Singapore. Dimitar was to contact Indonesia and clarify the current situation; it was suggested that if the situation has not improved within the next two months, the METAR shortfalls would be considered for inclusion in the APANPIRG list of deficiencies for Indonesia.

2.1.1.2 Seven TAFs from Indonesia are included in FTSR31 compiled by Singapore. While these TAFs were available most of the time, there existed some irregularities (in particular, WABB).

2.1.2 OPMET data from Pacific

2.1.2.1 It was recalled that OPMET/M TF /4 meeting proposed a new exchange scheme for the South Pacific bulletins. Due to lack of AFTN at the MET offices of the small island Pacific States,

the collection of METAR was to be done by RODB Nadi via e-mail. RODB Nadi should compile the South Pacific bulletins SAPS31 and SAPS32 and forward to all addressees via AFTN. Trials have been conducted with the participation of Nadi, Tonga and Singapore, however, the operational implementation have been significantly delayed due to Internet security issues at Nadi. Thus, the irregularities in the exchange of South Pacific METAR persisted.

2.1.2.2 The meeting considered the following measures in order to improve the situation: 1) it was agreed that e-mail was the most viable communication means for outgoing OPMET data from the island States in the South Pacific; 2) contact Nadi and clarify whether they are in the position to implement the compilation and e-mail-to-AFTN relay of the South Pacific METAR bulletins; 3) in case that Nadi is not in the position to provide this service in a sustainable manner, then an alternative ROBEX centre should be tasked with the collection of the OPMET data via e-mail; such a centre should have the functionality of relaying the bulletins via AFTN to other centres.

2.1.2.3 The meeting also noted irregularities in the TAF from South Pacific. Singapore did not receive FTPS31 via AFTN but via ISCS. Dimitar informed of the plan to establish an ICAO Technical Cooperation MET Project for the South-Pacific sub-region. The project would address the issues identified by the OPMET/M TF regarding the shortfalls of OPMET data.

2.1.3 Other OPMET shortfalls and irregularities

2.1.3.1 The meeting was informed of problems experienced recently with bulletins from India, which have been partly resolved. However, there were still issues that needed to be addressed by RODB Bangkok and Singapore in coordination with the Indian member of the OPMET/M TF.

2.1.3.2 The meeting agreed that the OPMET shortfalls should be further addressed through a systematic monitoring of the exchange using the same methodology. Problems with availability and regularity identified should be notified to the responsible authorities in the States concerned. Systematic and persistent shortfalls should be considered as MET deficiencies.

2.1.3.3 Irregularities persisted for some States in South East Asia, like Cambodia and Myanmar (data received only during daytime). METAR from Bhutan was not yet implemented. All these issues were to be addressed and an evaluation should be performed which of them should be qualified as “deficiencies”.

Agenda Item 3: Status of mirroring of RODB data

3.1 OPMET/M TF had decided that all ASIA/PAC RODBs should gradually achieve almost full mirroring of the OPMET data content. It was clarified that this requirement referred mainly to the OPMET data from the ASIA/PAC region, while the data from outside the region could still differ, due to the different areas of responsibility in regard to the inter-regional exchange.

3.2 The meeting identified that the level of mirroring has not changed recently and the estimates based on 2005 survey were still valid. They were as follows: mirroring of data between Bangkok and Singapore – more than 90%; between Tokyo and Singapore – about 80%. There were no data on the status of mirroring for RODB Brisbane.

3.3 The meeting agreed that the effort should continue and ensure that all ASIA/PAC RODBs store all OPMET data from the region.

Agenda Item 4: Progress with ASIA/PAC OPMET Data Catalogue

4.1 The ROBEX Data Base developed by RODB Brisbane was distributed to all Data Banks and to the Regional Office. The SADIS User Guide (SUG) Annex 1 was already converted by

the ICAO HQ into a data base format. Similar exercise was ongoing for the FASID Tables related to the OPMET Exchange. It was suggested that in the future the ROBEX Handbook which is currently available in hardcopy or pdf format should be replaced by an interactive web application.

Agenda Item 5: Relaying ASIA/PAC OPMET data to SADIS and ISCS and harmonization of OPMET data on the two satellite broadcasts

5.1 The monitoring of ASIA/PAC OPMET data on SADIS has shown steady improvement during the last two years and any problems reported were handled in due course with the help of RODB Singapore.

5.2 It has been identified that the OPMET data from ASIA/PAC on the ISCS broadcast differed significantly from those on SADIS broadcast. RODB Tokyo was sending all data available, however, filtering and recompiling has been performed at the KWBC and as a result, many data from the Region were missing. The meeting was of the view that KWBC should be contacted and advised to use the original bulletins because the recompiled once disseminated with different WMO headings created duplication and were difficult to handle. Examples are provided in **Appendix B** to the report.

5.3 Dimitar informed that it was very likely that experts from SADIS and ISCS provider States would be attending the coming OPMET/M TF/5 meeting in June. This would provide a very good opportunity to discuss the issues raised and express the concerns related to the non-standard procedures used by KWBC. In the meantime, the examples provided by RODB Singapore would be sent to the MET Section, ICAO HQ (the Secretary of SADISOPSG) to inform them about this situation.

5.4 The meeting agreed on a proposal by Chua that all METNO messages notifying changes to the ROBEX bulletins should be sent to the SADIS and ISCS Provider States to give them advanced notice of the forthcoming changes. All ROBEX centres should be advised to add the AFTN addresses of London and Washington to the distribution list for METNO (also to be added in the ROBEX Handbook).

Agenda Item 6: SIGMET tests – future plans

6.1 The meeting reviewed the results of the SIGMET tests conducted in January and February 2007. It was agreed that the results were very useful in identifying problems with availability and dissemination. RODBs Bangkok, Brisbane, Singapore and Tokyo have supported the tests and did very good job in preparing the summary tables for the three types of SIGMET.

6.2 Average availability of test SIGMET was of the range of 60%. The most alarming “misses” were related to States with high frequency of volcanic and tropical cyclone events, such as Indonesia and Papua New Guinea. The participation in the States in the Bay of Bengal was also not satisfactory. There were few States where SIGMET was not available at all: Cambodia, Lao PDR and DPR Korea. All these issues were to be addresses by the CNS/MET Sub-group.

6.3 The RODBs have recorded some formatting errors in the test SIGMET which should be addresses as well. The problem seemed to be in the manual preparation and sending the messages (e.g., direct typing in the AFTN terminal) without quality control.

6.4 RODB Tokyo has assisted in the inclusion of MWOs from the Russian Federation in the VA SIGMET Test. This was considered very important since 13 MWOs in Russia were included in the area of responsibility of VAAC Tokyo. In this year’s test Tokyo received test SIGMETs from seven Russian MWOs which was a good achievement comparing with the previous tests. However, the SIGMETs from Russian Federation were received only via GTS and therefore they were not available in the other RODBs. It was agreed that RODB Tokyo would undertake that in case of

receiving SIGMET from Russia via GTS, it would be automatically relayed to the other RODBs via AFTN.

6.5 A question was raised on the format for dissemination of special air reports for which SIGMET was not issued. In some cases MWOs were using SIGMET WMO header for special air reports. Dimitar will study and advise.

6.6 On the future plans for SIGMET tests there was a general agreement that the tests should continue regularly once or twice per year. This should be part of the overall effort of resolving the deficiencies related to SIGMET as decided by the CNS/MET SG/10 in July 2006.

Agenda Item 7: Harmonization of monitoring and quality control procedures

7.1 The meeting reviewed and discussed in detail the procedures and performance indices (PI) used by the RODBs in monitoring of the OPMET exchange.

7.2 The PIs proposed at the OPMET/M TF/4 were based on those developed for SADIS (IP/5 for SADISOPSG/8 refers) and included indices for availability, regularity and compliance. Chua presented detailed information on the algorithms for calculating those indices by RODB Singapore.

7.3 The meeting discussed further refinements of the indices and the calculation algorithms. It was clarified that the three indices were designed for performing monitoring at bulletin level. However, it was desirable that they are complemented with indices relating to each individual airport (in particular, for the AOP airports). RODB Singapore will work on the subject and report on the progress at OPMET/M TF/5.

7.4 The representatives of RODB Singapore and Bangkok agreed to join efforts in testing the monitoring procedures. Bangkok will provide a pre-formatted data set to Singapore for checking the developed procedures and their compliance with data from other RODBs.

7.5 It was considered desirable to conduct a limited monitoring exercise for the time of the OPMET/M TF/5 meeting. It was proposed to use the first half of May for calculating the threshold values and second half of May for actual monitoring.

7.6 With the clarifications provided during the discussion, it was decided that the guidance on quality control and monitoring could be included in the ROBEX Handbook and Dimitar will arrange posting of the amended version on the ICAO Bangkok website (www.bangkok.icao.int) within a month.

Agenda Item 8: Any other business

8.1 Dimitar informed the meeting about the approval of Amendment 74 to Annex 3. Amendments related to the TAF format were of main concern. It has been explained that these changes would become applicable in November 2008 after the WMO introduces the related changes to the Manual on Codes.

8.2 The meeting felt that the changes to the TAF format and the related procedures will affect seriously the ROBEX exchange. Therefore, these issues should be tabled for discussion at the coming OPMET/M TF/5 meeting and CNS/MET SG/11 meeting. The meeting noted also the new provisions for issuance of SPECI.

8.3 A specific issue was raised regarding the effect of the TAF changes to VOLMET and D-VOLMET. Clarification was to be provided by ICAO on how to ensure consistency of VOLMET broadcast with D-VOLMET in case of 30-hr TAF.

8.4 The meeting touched briefly upon the transition to BUFR coded OPMET data. Dimitar informed that there were on-going intensive consultations with the competent WMO bodies and it was expected that new information will be soon available for discussion by OPPMET/M TF and CNS/MET SG.

Closure of the meeting

9. The meeting was closed at 13.00 hr on 10 April 2007. All participants expressed their appreciation to the Singapore hosts for the excellent arrangements and warm hospitality.

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First RODB Coordination Meeting
Changi Airport, Singapore, 9 – 10 April 2007

List of Participants

	Name	Title/Organization	TEL/FAX Number	E-mail
1.	**RODB Bangkok (Thailand)**			
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2.	**RODB Tokyo (Japan)**			
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4.	**ICAO**			
	Mr. Dimitar H. Ivanov	Regional Officer, MET ICAO Asia/Pacific Office 252/1 Vibhavadi-Rangsit Road Ladyao, Chatuchak Bangkok 10900	Tel: +66 (2) 537-8189 (153) Fax +66 (2) 537-8199	divanov@bangkok.icao.int

Examples of differences in OPMET bulletins on SADIS and ISCS

(prepared by RODB Singapore)

Harmonization of OPMET data on SADIS & ISCS

To compare SADIS and ISCS OPMET bulletins :

1) WMO abbreviated heading

Origin / SADIS	**ISCS B/C**
FTHK31 VHHH	FTAS32 KWBC
FTAU31 YBBN	FTAU31 KWBC
FTNZ31 NZKL	FTNZKL KWBC
FTMS31 WMKK	FTAS33 KWBC
FTIN31 VABB	FTAS31 KWBC

2) Message Format

```
SAUS52 KWBC 082300
METAR
KBVE 082251Z AUTO 06005KT 9SM CLR 18/11 A3012=
METAR COR KDAB 082253Z 05010KT 10SM FEW110 20/13 A3011=
```

```
SAW33 KWBC 030600 RRC
METAR
OMAA 030600Z 18016KT 4000 DU NSC 31/08 Q1010 A2984 TEMPO 3000=
OMAL 030600Z 18021KT 3000 BLSA SKC 30/12 Q1012 A2990=
OMDB 030600Z 13014KT 7000 NSC 29/12 Q1010 NOSIG=
OMFJ 030600Z 01007KT CAVOK 26/17 Q1012 A2990=
```

```
SAUK31 KWBC 030550 CCA
METAR
EGLL 030550Z VRB03KT 9999 SCT026 05/02 Q1026 TEMPO BKN010=
```

```
FTNZ31 KWBC 022357
TAF
TAF NZAA 022301Z 030024 21008KT 30KM SCT025=
TAF NZCH 022257Z 030024 06010KT 40KM SCT050 TEMPO 0310 6000 SHRA
FEW040CB FM1100 22008KT 30KM -SHRA SCT015 BKN020
      TEMPO 1117 6000 RA BKN012
```

```
      TEMPO 1723 4000 DZ BKN006=
```

```
FTIO31 KWBC 022354
TAF
TAF AMD WBGG 022345Z 030024 15005KT 9999 FEW002 BKN150
      TEMPO 0811 4000 TSRA FEW015CB BKN018=
```

```
FTAS32 KWBC 022303 AAA
TAF AMD
TAF AMD VHHH 022300Z 030024 02015KT 9999 FEW010 SCT025 BKN060
      TEMPO 0006 AND 1218 4000 -RA TX18/06Z TN15/23Z=
```

3) Message Content – ISCS broadcasts different message reports:

SADIS ftp	ISCS B/C
SASB31 VCCC 030610 VCBI 030610Z 25008KT 9999 FEW016 31/25 Q1009 NOSIG= VRMM 030600Z 29007KT 9000 FEW018 32/25 Q1010=	**SAAS31 KWBC** 030600 RRD METAR VCBI 030610Z 25008KT 9999 FEW016 31/25 Q1009 NOSIG=
SAMS32 WMKK 030600 METAR 030600Z METAR WBGG 030600Z 04009KT 9000 SCT022 BKN300 31/24 Q1008 NOSIG= METAR WBKK 030600Z 32006KT 9999 FEW016 BKN300 31/25 Q1008 NOSIG= METAR WMKJ 030600Z 17005KT 9999 FEW020 SCT140 BKN270 30/26 Q1009= METAR WMKK 030600Z 17005KT 9999 FEW018 SCT140 BKN270 31/26 Q1008 NOSIG= METAR WMKP 030600Z 20007KT 9999 FEW017CB BKN270 32/26 Q1008 NOSIG= METAR WMSA 030600Z 16005KT 9999 SCT018 SCT120 BKN270 31/25 Q1009 NOSIG=	**SAAS33 KWBC** 030600 RRE METAR WMKJ 030600Z 17005KT 9999 FEW020 SCT140 BKN270 30/26 Q1009= WMKK 030600Z 17005KT 9999 FEW018 SCT140 BKN270 31/26 Q1008 NOSIG= WMKP 030600Z 20007KT 9999 FEW017CB BKN270 32/26 Q1008 NOSIG= WMSA 030600Z 16005KT 9999 SCT018 SCT120 BKN270 31/25 Q1009 NOSIG=
FCHK31 VHHH 030500 TAF VHHH 030500Z 030615 04010KT 9999	**FCAS32 KWBC** 030521 TAF

	FEW015 SCT025 BKN060 TEMPO 1215 4000 -RA= TAF RCTP 030500Z 030615 06020KT 9999 FEW015 BKN030 BKN050 TEMPO 0615 06020G30KT 7000 RA FEW010 BKN018 OVC040= TAF RCKH 030500Z 030615 30007KT 6000 FEW015 BKN070 TEMPO 0610 4000 RA FEW008 BKN018 OVC040= TAF RCSS 030500Z 030615 10010KT 9999 FEW015 BKN030 BKN060 TEMPO 0615 7000 RA FEW012 BKN022 OVC050= TAF VMMC 030500Z 030615 01018KT 9000 FEW008 SCT015 BKN050 TEMPO 1215 5000 -RA= TAF RPLL 030500Z 030615 14008KT 9999 FEW025 SCT300 TEMPO 0612 09010KT 9999 SCT025 BKN300 TX34/06Z TN28/15Z= TAF RPVM 030500Z 030615 12008KT 9999 FEW020 SCT300 TEMPO 0612 06010KT 9999 FEW020 SCT100=	TAF VHHH 030500Z 030615 04010KT 9999 FEW015 SCT025 BKN060 TEMPO 1215 4000 -RA= TAF VMMC 030500Z 030615 01018KT 9000 FEW008 SCT015 BKN050 TEMPO 1215 5000 -RA=
	FCSR31 WSSS 030500 TAF WSSS 030450Z 030615 08007KT 9999 FEW018CB SCT020 TEMPO 0609 3000 TSRA SCT012CB BKN015= TAF WSAP 030450Z 030615 08007KT 9999 FEW018CB SCT020 TEMPO 0609 3000 TSRA SCT012CB BKN015= TAF WMKK 030300Z 030615 16005KT 9999 FEW017CB SCT140 BKN260 TEMPO 0711 4000 TSRA FEW015CB= TAF WIII 030430Z 030615 33010KT 9999 FEW025 TEMPO 0813 TS FEW020CB BECMG 1214 21003KT 5000= TAF WIHH 030430Z 030615 33010KT 8000 SCT020 TEMPO 0912 4000 TSRA FEW017CB SCT020=	**FCAS33 KWBC** 030503 TAF TAF WMKK 030300Z 030615 16005KT 9999 FEW017CB SCT140 BKN260 TEMPO 0711 4000 TSRA FEW015CB= TAF WSAP 030450Z 030615 08007KT 9999 FEW018CB SCT020 TEMPO 0609 3000 TSRA SCT012CB BKN015= TAF WSSL 030450Z 030615 08007KT 9999 FEW018CB SCT020 TEMPO 0609 3000 TSRA SCT012CB BKN015= TAF WSSS 030450Z 030615 08007KT 9999 FEW018CB SCT020 TEMPO 0609 3000 TSRA SCT012CB BKN015=