



INTERNATIONAL CIVIL AVIATION ORGANIZATION

**THE NINTH MEETING OF THE ASIA/PACIFIC MANAGEMENT
TASK FORCE (OPMET/M TF/9)**

Bangkok, Thailand, 21-23 March 2011

Agenda Item 4: Management of OPMET exchange

- a) **OPMET monitoring and quality control procedures**
- b) **RODB backup procedures – contingency trials**

**RODB BACK-UP PROCEDURE REAL-TIME EXERCISE
BETWEEN RODBS BANGKOK AND SINGAPORE**

(Presented by Thailand)

SUMMARY

This working paper provides information on the sixth real-time backup exercise undertaken by RODB Bangkok and RODB Singapore on the 16 February 2011.

1. INTRODUCTION

1.1 The Third Meeting of ASIA/PAC OPMET Management Task Force (OPMET/M TF/3) in March 2005 established the procedures for dissemination of Asia/Pac OPMET Bulletins to WAFC, London by Bangkok RODB in the event that Singapore RODB had a failure in their telecommunication network/system.

1.2 The trial is carried out by the two RODBs regularly on yearly basis. The first real-time backup exercise was established in January 2006.

1.3 This paper presents the result and analysis of the sixth real-time backup exercise and a comparison with the previous exercise that were conducted on 29 May 2007, 19 March 2008, 16 March 2009 and 26 February 2010.

2. PREPARATION AND PROCEDURES FOR THE SIXTH REAL-TIME BACKUP EXERCISE

2.1 RODB Singapore provided the ASIA/PAC OPMET bulletins information to enable RODB Bangkok to establish the backup distribution arrangement.

2.2 Both RODBs agreed to monitor a list of selected ASIA/PAC OPMET bulletins during exercise between 0200 and 0800 UTC on 16 February 2011.

2.3 To activate the backup plan, both RODBs communicated through facsimile and e-mail

2.4 Activation of Backup Procedures was initiated by Singapore at 0155 UTC.

2.5 To monitor traffic data – Bangkok took over the switching at 0200UTC.

2.6 In the recovery phase – Bangkok stopped the transmission at 0800UTC.

3. RESULT

Type of Message	No. of bulletins RX by RODB Singapore	No. of bulletins RX by RODB Bangkok	No. of bulletins routed to London IROG By RODB Bangkok	Ability of transmission	No. of bulletins not successfully routed by RODB Bangkok	Bulletin Transit time recorded at RODB Bangkok (minutes)		
						Max	Min	Average
SA bulletins	485	467	465	95.9%	20	27	1	1.1
FT bulletins	70	69	69	98.5%	1	21	1	4
Total	555	536	534	96.2%	21			

3.1 RODB Bangkok was able to transmit 534 of 555 of METAR and TAF bulletins, i.e. 96.2% of the messages that would have been transmitted by RODB Singapore to SADIS gateway, a 2.1% performance drop from the test in year 2010 (98.3%)

3.2 21 of 555 messages (3.8%) were not successfully routed due to:

- 2 METAR bulletins had compilation errors at RODB Bangkok
- One TAF bulletin and 18 METAR bulletins did not reached RODB Bangkok : those were
 - a. One TAF bulletin from FTNZ31 NZKL 160459
 - b. One METAR bulletin from SAHK31 VHHH 160430
 - c. One METAR bulletin from SAJP32 RJTD 160400 and
 - d. 16 METAR bulletins from OIII, SAIR31-37 OIII period 160500
 Further details are shown in the appendix to this WP

3.3 Bulletin average transit time was less than 5 minutes, nearly 1 minute for METAR and 4 minutes for TAF.

3.4 The following table shows the result of backup exercise, conducted yearly between 2007 and 2011.

	Year 2007	2008	2009	2010	2011
RODB Bangkok Successfully transmitted	94%	91%	91%	98.3%	96.2%

4. ACTION BY THE MEETING

4.1 The meeting is invited to discuss as follows:

- a) Seek further improvement, if required, based on the result.

Summary Table of Switching of ASIA/PAC & MID OPMET Bulletins
on 16th February 2011

METAR Bulletins							
	TTAAii	CCCC	YYGGgg	BBB	Recorded by WSSS RODB	Recorded by VTBB RODB	Recorded by VTBB RODB
					RX Time UTC (hh:mm)	RX Time UTC (hh:mm)	TX Time UTC (hh:mm)
1	SAAE31	VTBB	160200		02:07	02:05	02:06
2	SAAE31	VTBB	160200	RRA	02:10	02:08	02:10
3	SAAE31	VTBB	160200	RRB	02:13	02:11	02:14
4	SAAE31	VTBB	160200	CCA	02:15	02:13	02:15
5	SAAE31	VTBB	160230		02:36	02:35	02:36
6	SAAE31	VTBB	160300		03:06	03:06	03:06
7	SAAE31	VTBB	160300	CCA	03:08	03:08	03:08
8	SAAE31	VTBB	160300	RRA	03:16	03:10	03:16
9	SAAE31	VTBB	160300	RRB	03:21	03:16	03:21
10	SAAE31	VTBB	160330		03:36	03:35	03:36
11	SAAE31	VTBB	160330	RRA	03:37	03:37	03:37
12	SAAE31	VTBB	160330	RRB	03:53	03:53	03:53
13	SAAE31	VTBB	160400		04:07	04:05	04:06
14	SAAE31	VTBB	160400	RRA	04:08	04:04	04:08
15	SAAE31	VTBB	160430		04:36	04:35	04:36
16	SAAE31	VTBB	160430	RRA	04:37	04:36	04:37
17	SAAE31	VTBB	160500		05:07	05:05	05:06
18	SAAE31	VTBB	160500	RRA	05:07	05:06	05:07
19	SAAE31	VTBB	160500	RRB	05:08	05:06	05:09
20	SAAE31	VTBB	160500	RRC	05:13	05:05	05:13
21	SAAE31	VTBB	160500	RRD	05:32	05:30	05:32
22	SAAE31	VTBB	160300	RRC	05:36	05:35	05:36
23	SAAE31	VTBB	160530		05:37	05:35	05:37
24	SAAE31	VTBB	160530	RRA	05:39	05:38	05:39
25	SAAE31	VTBB	160530	RRB	05:40	05:38	05:39
26	SAAE31	VTBB	160530	RRC	05:42	05:41	05:42
27	SAAE31	VTBB	160530	RRD	05:52	05:30	05:52
28	SAAE31	VTBB	160600		06:07	06:05	06:06
29	SAAE31	VTBB	160600	RRA	06:08	06:07	06:08
30	SAAE31	VTBB	160630		06:36	06:35	06:36
31	SAAE31	VTBB	160700		07:06	07:05	07:06
32	SAAE31	VTBB	160730		07:36	07:35	07:36
33	SAAE31	VTBB	160730	RRA	07:42	07:41	07:42
34	SAAU31	YBBN	160200		02:10	02:18	02:20
35	SAAU31	YBBN	160230		02:40	02:40	02:42
36	SAAU31	YBBN	160300		03:10	03:10	03:16
37	SAAU31	YBBN	160330		03:40	03:40	03:42
38	SAAU31	YBBN	160400		04:11	04:10	04:16
39	SAAU31	YBBN	160430		04:40	04:40	04:40
40	SAAU31	YBBN	160500		05:10	05:10	05:20
41	SAAU31	YBBN	160530		05:40	05:40	05:42
42	SAAU31	YBBN	160600		06:10	06:10	06:14
43	SAAU31	YBBN	160630		06:40	06:40	06:42

METAR Bulletins							
	TTAAii	CCCC	YYGGgg	BBB	Recorded by WSSS RODB	Recorded by VTBB RODB	Recorded by VTBB RODB
					RX Time UTC (hh:mm)	RX Time UTC (hh:mm)	TX Time UTC (hh:mm)
44	SAAU31	YBBN	160700		07:10	07:10	07:13
45	SAAU31	YBBN	160730		07:40	07:40	07:42
46	SAAU32	YBBN	160200		02:10	02:10	02:16
47	SAAU32	YBBN	160230		02:40	02:40	02:42
48	SAAU32	YBBN	160300		03:10	03:10	03:16
49	SAAU32	YBBN	160330		03:40	03:40	03:42
50	SAAU32	YBBN	160400		04:11	04:10	04:15
51	SAAU32	YBBN	160430		04:40	04:40	04:42
52	SAAU32	YBBN	160500		05:10	05:10	05:19
53	SAAU32	YBBN	160530		05:40	05:40	05:42
54	SAAU32	YBBN	160530	RRA	05:50	05:50	05:51
55	SAAU32	YBBN	160600		06:10	06:17	06:18
56	SAAU32	YBBN	160630		06:40	06:40	06:42
57	SAAU32	YBBN	160700		07:10	07:10	07:13
58	SAAU32	YBBN	160730		07:40	07:40	07:42
59	SABN31	OBBI	160200		02:10	02:10	02:15
60	SABN31	OBBI	160200	RRA	02:11	02:11	02:17
61	SABN31	OBBI	160300		03:00	03:01	03:02
62	SABN31	OBBI	160400		04:00	04:00	04:02
63	SABN31	OBBI	160500		05:05	05:05	05:12
64	SABN31	OBBI	160600		06:10	06:10	06:12
65	SABN31	OBBI	160700		07:00	07:00	07:02
66	SABN31	OBBI	160800		08:00	08:00	08:02
67	SABN32	OBBI	160200		02:05	02:00	02:10
68	SABN32	OBBI	160300		03:10	03:10	03:15
69	SABN32	OBBI	160300	RRA	03:10	03:10	03:17
70	SABN32	OBBI	160400		04:05	04:05	04:10
71	SABN32	OBBI	160500		05:05	05:05	05:14
72	SABN32	OBBI	160601		06:10	06:10	06:13
73	SABN32	OBBI	160600	RRA	06:19	06:19	06:20
74	SABN32	OBBI	160700		07:05	07:05	07:09
75	SACI31	ZBBB	160200		02:05	02:11	02:17
76	SACI31	ZBBB	160230		02:35	02:42	02:43
77	SACI31	ZBBB	160300		03:05	03:08	03:09
78	SACI31	ZBBB	160330		03:35	03:35	03:36
79	SACI31	ZBBB	160400		04:05	04:09	04:09
80	SACI31	ZBBB	160430		04:35	04:36	04:37
81	SACI31	ZBBB	160500		05:05	05:05	05:13
82	SACI31	ZBBB	160530		05:35	05:35	05:38
83	SACI31	ZBBB	160600		06:05	06:05	06:07
84	SACI31	ZBBB	160630		06:35	06:35	06:43
85	SACI31	ZBBB	160700		07:05	07:05	07:08
86	SACI31	ZBBB	160730		07:35	07:35	07:36
87	SACI32	ZBBB	160200		02:05	02:05	02:10
88	SACI32	ZBBB	160200	RRA	02:14	02:14	02:19

METAR Bulletins							
	TTAAii	CCCC	YYGGgg	BBB	Recorded by WSSS RODB	Recorded by VTBB RODB	Recorded by VTBB RODB
					RX Time UTC (hh:mm)	RX Time UTC (hh:mm)	TX Time UTC (hh:mm)
89	SACI32	ZBBB	160215	RRA	02:15	02:18	02:45
90	SACI32	ZBBB	160300		03:05	03:08	03:09
91	SACI32	ZBBB	160400		04:05	04:05	04:10
92	SACI32	ZBBB	160500		05:05	05:05	05:14
93	SACI32	ZBBB	160600		06:05	06:05	06:08
94	SACI32	ZBBB	160700		07:05	07:05	07:09
95	SACI32	ZBBB	160717	RRA	07:17	07:17	07:26
96	SACI41	ZBBB	160200		02:06	02:06	02:11
97	SACI41	ZBBB	160300		03:06	03:06	03:10
98	SACI41	ZBBB	160300	RRA	03:07	03:07	03:12
99	SACI41	ZBBB	160400		04:06	04:06	04:11
100	SACI41	ZBBB	160500		05:06	05:06	05:15
101	SACI41	ZBBB	160500	RRA	05:07	05:08	05:17
102	SACI41	ZBBB	160600		06:06	06:13	06:16
103	SACI41	ZBBB	160700		07:06	07:06	07:10
104	SAHK31	VHHH	160200		02:03	02:03	02:04
105	SAHK31	VHHH	160230		02:31	02:31	02:33
106	SAHK31	VHHH	160300		03:02	03:02	03:05
107	SAHK31	VHHH	160330		03:32	03:32	03:33
108	SAHK31	VHHH	160400		04:04	04:04	04:08
109	SAHK31	VHHH	160430		04:31	04:31	Not distribute
110	SAHK31	VHHH	160500		05:03	05:03	05:21
111	SAHK31	VHHH	160530		05:34	05:34	05:36
112	SAHK31	VHHH	160600		06:04	06:04	06:05
113	SAHK31	VHHH	160630		06:32	06:32	06:34
114	SAHK31	VHHH	160700		07:01	07:00	07:03
115	SAHK31	VHHH	160700	CCA	07:11	07:11	07:13
116	SAHK31	VHHH	160730		07:32	07:32	07:33
117	SAID31	WIII	160200		02:09	02:10	02:15
118	SAID31	WIII	160230		02:39	02:40	02:41
119	SAID31	WIII	160300		03:10	03:10	03:15
120	SAID31	WIII	160330		03:40	03:40	03:41
121	SAID31	WIII	160400		04:10	04:10	04:15
122	SAID31	WIII	160400	RRA	04:17	04:24	04:25
123	SAID31	WIII	160430		04:40	04:40	04:41
124	SAID31	WIII	160500		05:10	05:10	05:19
125	SAID31	WIII	160500	RRA	05:15	05:29	05:30
126	SAID31	WIII	160530		05:40	05:40	05:41
127	SAID31	WIII	160600		06:10	06:10	06:13
128	SAID31	WIII	160630		06:40	06:40	06:41
129	SAID31	WIII	160630	RRA	06:40	06:40	06:42
130	SAID31	WIII	160700		07:10	07:10	07:12
131	SAID31	WIII	160730		07:40	07:40	07:41
132	SAID32	WIII	160200		02:10	02:10	02:16
134	SAID32	WIII	160230		02:40	02:40	02:41

METAR Bulletins							
	TTAAii	CCCC	YYGGgg	BBB	Recorded by WSSS RODB	Recorded by VTBB RODB	Recorded by VTBB RODB
					RX Time UTC (hh:mm)	RX Time UTC (hh:mm)	TX Time UTC (hh:mm)
135	SAID32	WIII	160300		03:10	03:10	03:15
136	SAID32	WIII	160330		03:40	03:40	03:41
137	SAID32	WIII	160400		04:10	04:10	04:15
138	SAID32	WIII	160430		04:40	04:40	04:41
139	SAID32	WIII	160500		05:10	05:10	05:26
140	SAID32	WIII	160530		05:40	05:40	05:41
141	SAID32	WIII	160600		06:10	06:10	06:13
142	SAID32	WIII	160600	RRA	06:12	06:12	06:29
143	SAID32	WIII	160630		06:40	06:40	06:41
144	SAID32	WIII	160700		07:10	07:10	07:12
145	SAID32	WIII	160730		07:40	07:40	07:41
146	SAID33	WIII	160200		02:10	02:11	02:18
147	SAID33	WIII	160200	RRA	02:11	02:10	02:20
148	SAID33	WIII	160230		02:40	02:40	02:42
149	SAID33	WIII	160300		03:10	03:10	03:15
150	SAID33	WIII	160300	RRA	03:14	03:14	03:40
151	SAID33	WIII	160330		03:40	03:40	03:42
152	SAID33	WIII	160400		04:10	04:10	04:15
153	SAID33	WIII	160430		04:40	04:40	04:41
154	SAID33	WIII	160430	RRA	04:47	04:47	04:48
155	SAID33	WIII	160500		05:10	05:10	05:19
156	SAID33	WIII	160530		05:40	05:40	05:42
157	SAID33	WIII	160600		06:10	06:10	06:13
158	SAID33	WIII	160600	RRA	06:19	06:29	06:30
159	SAID33	WIII	160630		06:40	06:40	06:42
160	SAID33	WIII	160700		07:10	07:10	07:13
161	SAID33	WIII	160730		07:40	07:40	07:42
162	SAIN31	VABB	160210		02:21	02:21	02:22
163	SAIN31	VABB	160240		02:51	02:51	02:52
164	SAIN31	VABB	160310		03:21	03:21	03:22
165	SAIN31	VABB	160340		03:51	03:51	03:55
166	SAIN31	VABB	160410		04:21	04:21	04:22
167	SAIN31	VABB	160410	RRA	04:35	04:35	04:37
168	SAIN31	VABB	160440		04:51	04:51	04:53
169	SAIN31	VABB	160440	RRA	05:10	05:10	05:20
170	SAIN31	VABB	160510		05:50	05:50	05:51
171	SAIN31	VABB	160540		05:53	05:53	05:54
172	SAIN31	VABB	160540	RRA	06:08	06:08	06:11
173	SAIN31	VABB	160600		06:21	06:21	06:23
174	SAIN31	VABB	160640		06:52	06:51	06:53
175	SAIN31	VABB	160710		07:21	07:21	07:23
176	SAIN31	VABB	160740		07:51	07:51	07:53
177	SAIN31	VABB	160740	RRA	07:54	07:56	07:56
178	SAIN32	VIDP	160230		02:45	02:46	02:47
179	SAIN32	VIDP	160300		03:14	03:14	03:19

METAR Bulletins							
	TTAAii	CCCC	YYGGgg	BBB	Recorded by WSSS RODB	Recorded by VTBB RODB	Recorded by VTBB RODB
					RX Time UTC (hh:mm)	RX Time UTC (hh:mm)	TX Time UTC (hh:mm)
180	SAIN32	VIDP	160330		03:46	03:46	03:47
181	SAIN32	VIDP	160330	RRA	03:48	03:48	03:49
182	SAIN32	VIDP	160330	RRB	04:00	04:00	04:02
183	SAIN32	VIDP	160400		04:14	04:14	04:17
184	SAIN32	VIDP	160430		04:54	04:54	04:55
185	SAIN32	VIDP	160430	RRA	05:11	05:11	05:20
186	SAIN32	VIDP	160500		05:14	05:14	05:23
187	SAIN32	VIDP	160530		05:54	05:54	05:55
188	SAIN32	VIDP	160600		06:14	06:14	06:16
189	SAIN32	VIDP	160630		06:45	06:45	06:46
190	SAIN32	VIDP	160700		07:14	07:14	07:15
191	SAIN32	VIDP	160730		07:45	07:45	07:46
192	SAIN33	VECC	160150		02:01	02:01	02:02
193	SAIN33	VECC	160250		03:01	03:02	03:03
194	SAIN33	VECC	160350		04:01	04:01	04:03
195	SAIN33	VECC	160450		05:01	05:01	05:05
196	SAIN33	VECC	160550		06:01	06:01	06:02
197	SAIN33	VECC	160650		07:01	07:01	07:02
198	SAIN33	VECC	160650	RRA	07:05	07:05	07:09
199	SAIN33	VECC	160750		08:00	08:00	08:02
200	SAIR31	OIII	160200		02:03	02:03	02:04
201	SAIR31	OIII	160200	RRA	02:03	02:03	02:05
202	SAIR31	OIII	160200	RRB	02:04	02:04	02:08
203	SAIR31	OIII	160300	RRA	03:06	03:08	03:13
204	SAIR31	OIII	160300	RRB	03:07	03:09	03:14
205	SAIR31	OIII	160300	RRC	03:07	03:09	03:14
206	SAIR31	OIII	160300	RRD	03:14	03:14	03:19
207	SAIR31	OIII	160300	RRE	03:14	03:14	03:20
208	SAIR31	OIII	160300	RRF	03:15	03:15	03:20
209	SAIR31	OIII	160300	RRG	03:16	03:15	03:20
210	SAIR31	OIII	160300	RRH	03:28	03:28	03:29
211	SAIR31	OIII	160330		03:33	03:33	03:34
212	SAIR31	OIII	160330	RRA	03:36	03:36	03:37
213	SAIR31	OIII	160330	RRB	03:39	03:39	03:41
214	SAIR31	OIII	160330	RRC	03:40	03:40	03:42
215	SAIR31	OIII	160404		04:03	04:03	04:05
216	SAIR31	OIII	160400	RRA	04:05	04:05	04:09
217	SAIR31	OIII	160430		04:33	04:33	04:35
218	SAIR31	OIII	160530		05:37	05:34	05:37
219	SAIR31	OIII	160530	RRA	05:37	05:35	05:37
220	SAIR31	OIII	160530	RRB	05:38	05:40	05:42
221	SAIR31	OIII	160530	RRC	05:42	05:42	05:43
222	SAIR31	OIII	160600		06:03	06:06	06:09
223	SAIR31	OIII	160630		06:33	06:46	06:47
224	SAIR31	OIII	160700		07:03	07:03	07:05

METAR Bulletins							
	TTAAii	CCCC	YYGGgg	BBB	Recorded by WSSS RODB	Recorded by VTBB RODB	Recorded by VTBB RODB
					RX Time UTC (hh:mm)	RX Time UTC (hh:mm)	TX Time UTC (hh:mm)
225	SAIR31	OIII	160700	RRA	07:23	07:24	07:25
226	SAIR31	OIII	160730		07:33	07:33	07:34
227	SAIR31	OIII	160730	RRA	07:36	07:36	07:37
228	SAIR32	OIII	160204		02:03	02:03	02:04
229	SAIR32	OIII	160200	RRA	02:55	02:56	02:58
230	SAIR32	OIII	160300		03:04	03:04	03:08
231	SAIR32	OIII	160300	RRA	03:05	03:06	03:11
232	SAIR32	OIII	160300	RRB	03:14	03:14	03:19
233	SAIR32	OIII	160300	RRC	03:15	03:15	03:20
234	SAIR32	OIII	160300	RRD	03:24	03:23	03:25
235	SAIR32	OIII	160300	RRE	03:24	03:24	03:26
236	SAIR32	OIII	160400		04:04	04:04	04:05
237	SAIR32	OIII	160600		06:03	06:08	06:12
238	SAIR32	OIII	160700		07:03	07:03	07:09
239	SAIR33	OIII	160200	RRA	02:06	02:06	02:11
240	SAIR33	OIII	160200		02:03	02:03	02:12
241	SAIR33	OIII	160200	RRB	02:11	02:12	02:18
242	SAIR33	OIII	160200	RRC	02:35	02:35	02:37
243	SAIR33	OIII	160300		03:04	03:04	03:09
244	SAIR33	OIII	160300	RRA	03:06	03:08	03:13
245	SAIR33	OIII	160300	RRB	03:12	03:11	03:18
246	SAIR33	OIII	160300	RRC	03:19	03:19	03:21
247	SAIR33	OIII	160300	RRD	03:58	03:57	03:59
248	SAIR33	OIII	160400		04:04	04:04	04:06
249	SAIR33	OIII	160400	RRA	04:16	04:16	04:18
250	SAIR33	OIII	160400	RRB	04:17	04:17	04:18
251	SAIR33	OIII	160600		06:03	06:10	06:14
252	SAIR33	OIII	160600	RRA	06:16	06:27	06:28
253	SAIR33	OIII	160600	RRB	06:16	06:28	06:29
254	SAIR33	OIII	160700		07:03	07:03	07:05
255	SAIR33	OIII	160700	RRA	07:04	07:04	07:08
256	SAIR34	OIII	160200		02:04	02:04	02:06
257	SAIR34	OIII	160200	RRA	02:05	02:05	02:10
258	SAIR34	OIII	160300		03:04	03:05	03:10
259	SAIR34	OIII	160400		04:04	04:04	04:23
260	SAIR34	OIII	160600		06:03	06:12	06:15
261	SAIR34	OIII	160700		07:03	07:03	07:05
262	SAIR35	OIII	160200		02:04	02:04	02:08
263	SAIR35	OIII	160300		03:04	03:05	03:10
264	SAIR35	OIII	160400		04:05	04:04	04:09
265	SAIR35	OIII	160600		06:03	06:13	06:16
266	SAIR35	OIII	160600	RRA	06:05	06:25	06:26
267	SAIR35	OIII	160700		07:03	07:04	07:06
268	SAIR36	OIII	160200		02:04	02:04	02:09

METAR Bulletins							
	TTAAii	CCCC	YYGGgg	BBB	Recorded by WSSS RODB	Recorded by VTBB RODB	Recorded by VTBB RODB
					RX Time UTC (hh:mm)	RX Time UTC (hh:mm)	TX Time UTC (hh:mm)
269	SAIR36	OIII	160300		03:04	03:06	03:10
270	SAIR36	OIII	160400		04:05	04:05	04:09
271	SAIR36	OIII	160600		06:03	06:15	06:17
272	SAIR36	OIII	160700		07:04	07:04	07:07
273	SAIR37	OIII	160200		02:04	02:04	02:09
274	SAIR37	OIII	160300		03:04	03:06	03:10
275	SAIR37	OIII	160300	RRA	03:06	03:07	03:16
276	SAIR37	OIII	160400		04:04	04:04	04:08
277	SAIR31	OIII	160500		05:03	No data	Not distribute
278	SAIR31	OIII	160500	RRA	05:09	No data	Not distribute
279	SAIR31	OIII	160500	RRB	05:10	No data	Not distribute
280	SAIR31	OIII	160500	RRC	05:14	No data	Not distribute
281	SAIR31	OIII	160500	RRD	05:18	No data	Not distribute
282	SAIR32	OIII	160500		05:03	No data	Not distribute
283	SAIR32	OIII	160500	RRA	05:14	No data	Not distribute
284	SAIR32	OIII	160500	RRB	05:16	No data	Not distribute
285	SAIR33	OIII	160500		05:04	No data	Not distribute
286	SAIR33	OIII	160500	RRA	05:06	No data	Not distribute
287	SAIR33	OIII	160500	RRB	05:07	No data	Not distribute
288	SAIR33	OIII	160500	RRC	05:16	No data	Not distribute
289	SAIR34	OIII	160500		05:04	No data	Not distribute
290	SAIR35	OIII	160500		05:05	No data	Not distribute
291	SAIR36	OIII	160500		05:05	No data	Not distribute
292	SAIR37	OIII	160500		05:05	No data	Not distribute
293	SAIR37	OIII	160600		06:04	06:16	06:17
294	SAIR37	OIII	160700		07:03	07:03	07:05
295	SAIR37	OIII	160700	RRA	07:14	07:14	07:15
296	SAJP31	RJTD	160200		02:06	02:06	02:12
297	SAJP31	RJTD	160300		03:06	03:06	03:11
298	SAJP31	RJTD	160400		04:06	04:06	04:12
299	SAJP31	RJTD	160500		05:06	05:06	05:15
300	SAJP31	RJTD	160600		06:07	06:06	06:09
301	SAJP31	RJTD	160700		07:06	07:06	07:10
302	SAJP32	RJTD	160200	RRA	02:07	02:07	02:12
303	SAJP32	RJTD	160200		02:07	02:33	02:34
304	SAJP32	RJTD	160300	RRA	03:07	03:07	03:12
305	SAJP32	RJTD	160300		03:07	03:13	03:19
306	SAJP32	RJTD	160400		04:06	04:07	04:12
307	SAJP32	RJTD	160400	RRA	04:07	04:07	Not distribute
308	SAJP32	RJTD	160500		05:06	05:07	05:16
309	SAJP32	RJTD	160500	RRA	05:06	05:07	05:16
310	SAJP32	RJTD	160600		06:07	06:07	06:10
311	SAJP32	RJTD	160600	RRA	06:07	06:07	06:10
312	SAJP32	RJTD	160700		07:06	07:07	07:10

METAR Bulletins							
	TTAAii	CCCC	YYGGgg	BBB	Recorded by WSSS RODB	Recorded by VTBB RODB	Recorded by VTBB RODB
					RX Time UTC (hh:mm)	RX Time UTC (hh:mm)	TX Time UTC (hh:mm)
313	SAJP32	RJTD	160700	RRA	07:06	07:07	07:10
314	SAJP38	RJTD	160200		02:07	02:07	02:13
315	SAJP38	RJTD	160200	RRB	02:18	02:18	02:20
316	SAJP38	RJTD	160200	RRA	02:07	02:33	02:34
317	SAJP38	RJTD	160300		03:07	03:07	03:12
318	SAJP38	RJTD	160300	RRA	03:07	03:07	03:12
319	SAJP38	RJTD	160300	RRB	03:18	03:18	03:21
320	SAJP38	RJTD	160400		04:07	04:07	04:12
321	SAJP38	RJTD	160400	RRA	04:07	04:07	04:18
322	SAJP38	RJTD	160400	RRB	04:18	04:18	04:19
323	SAJP38	RJTD	160500		05:07	05:07	05:17
324	SAJP38	RJTD	160500	RRA	05:07	05:07	05:17
325	SAJP38	RJTD	160500	RRB	05:18	05:18	05:27
326	SAJP38	RJTD	160600		06:07	06:07	06:10
327	SAJP38	RJTD	160600	RRA	06:07	06:07	06:10
328	SAJP38	RJTD	160600	RRB	06:18	06:18	06:19
329	SAJP38	RJTD	160700		07:07	07:07	07:10
330	SAJP38	RJTD	160700	RRA	07:07	07:07	07:11
331	SAJP38	RJTD	160700	RRB	07:18	07:18	07:19
332	SAKO31	RKSI	160200		02:04	02:04	02:09
333	SAKO31	RKSI	160230		02:34	02:34	02:35
334	SAKO31	RKSI	160300		03:04	03:04	03:08
335	SAKO31	RKSI	160330		03:34	03:34	03:35
336	SAKO31	RKSI	160400		04:04	04:04	04:13
337	SAKO31	RKSI	160430		04:34	04:34	04:35
338	SAKO31	RKSI	160500		05:04	05:04	05:12
339	SAKO31	RKSI	160530		05:34	05:34	05:36
340	SAKO31	RKSI	160600		06:04	06:04	06:05
341	SAKO31	RKSI	160630		06:34	06:34	06:35
342	SAKO31	RKSI	160700		07:04	07:04	07:07
343	SAKO31	RKSI	160730		07:34	07:34	07:35
344	SAMS31	WMKK	160200		02:09	02:08	02:13
345	SAMS31	WMKK	160230		02:37	02:38	02:39
346	SAMS31	WMKK	160300		03:09	03:08	03:12
347	SAMS31	WMKK	160330		03:38	03:38	03:39
348	SAMS31	WMKK	160400		04:09	04:08	04:13
349	SAMS31	WMKK	160430		04:38	04:38	04:39
350	SAMS31	WMKK	160500		05:09	05:08	05:17
351	SAMS31	WMKK	160530		05:38	05:38	05:39
352	SAMS31	WMKK	160600		06:09	06:08	06:11
353	SAMS31	WMKK	160630		06:38	06:38	06:39
354	SAMS31	WMKK	160700		07:09	07:08	07:11
355	SAMS31	WMKK	160730		07:38	07:38	07:39
356	SAMS38	WMKK	160200		02:09	02:08	02:14

METAR Bulletins							
	TTAAii	CCCC	YYGGgg	BBB	Recorded by WSSS RODB	Recorded by VTBB RODB	Recorded by VTBB RODB
					RX Time UTC (hh:mm)	RX Time UTC (hh:mm)	TX Time UTC (hh:mm)
357	SAMS38	WMKK	160200	RRA	02:10	02:10	02:16
358	SAMS38	WMKK	160200	CCA	02:18	02:18	02:19
359	SAMS38	WMKK	160300	RRA	03:10	03:08	03:14
360	SAMS38	WMKK	160300		03:09	03:08	03:17
361	SAMS38	WMKK	160300	RRB	03:12	03:12	03:18
362	SAMS38	WMKK	160400		04:09	04:04	04:14
363	SAMS38	WMKK	160400	RRA	04:11	04:10	04:15
364	SAMS38	WMKK	160500		05:09	05:08	05:18
365	SAMS38	WMKK	160500	RRA	05:10	05:10	05:19
366	SAMS38	WMKK	160400	CCA	05:16	05:16	05:24
367	SAMS38	WMKK	160600		06:09	06:08	06:11
368	SAMS38	WMKK	160600	RRA	06:10	06:10	06:12
369	SAMS38	WMKK	160600	RRB	06:12	06:12	06:15
370	SAMS38	WMKK	160600	CCA	06:12	06:12	06:15
371	SAMS38	WMKK	160700		07:09	07:08	07:12
372	SAMS38	WMKK	160700	CCA	07:10	07:10	07:12
373	SAMS38	WMKK	160700	RRA	07:12	07:12	07:13
374	SAMS38	WMKK	160700	RRB	07:20	07:20	07:21
375	SAMS38	WMKK	160700	CCB	07:32	07:32	07:33
376	SAMS38	WMKK	160700	CCC	07:36	07:36	07:37
377	SANG31	YBBN	160200		02:10	02:17	02:19
378	SANG31	YBBN	160200	RRA	02:20	02:20	02:21
379	SANG31	YBBN	160300		03:10	03:10	03:15
380	SANG31	YBBN	160300	RRA	03:20	03:21	03:25
381	SANG31	YBBN	160400		04:11	04:10	04:16
382	SANG31	YBBN	160400	RRA	04:20	04:20	04:21
383	SANG31	YBBN	160500		05:10	05:10	05:20
384	SANG31	YBBN	160500	RRA	05:20	05:20	05:28
385	SANG31	YBBN	160600		06:10	06:10	06:15
386	SANG31	YBBN	160600	RRA	06:20	06:20	06:21
387	SANG31	YBBN	160700		07:10	07:10	07:13
388	SANG31	YBBN	160700	RRA	07:20	07:20	07:21
389	SANZ31	NZKL	160200		02:07	02:07	02:12
390	SANZ31	NZKL	160300		03:07	03:07	03:11
391	SANZ31	NZKL	160400		04:07	04:07	04:12
392	SANZ31	NZKL	160500		05:07	05:07	05:16
393	SANZ31	NZKL	160600		06:07	06:07	06:10
394	SANZ31	NZKL	160700		07:07	07:07	07:10
395	SAPK31	OPKC	160200	RRA	02:00	02:00	02:01
396	SAPK31	OPKC	160200	RRB	02:03	02:03	02:05
397	SAPK31	OPKC	160230		02:29	02:29	02:30
398	SAPK31	OPKC	160230	RRA	02:32	02:32	02:34
399	SAPK31	OPKC	160300		02:59	02:59	02:59
400	SAPK31	OPKC	160300	RRA	03:06	03:06	03:11

METAR Bulletins							
	TTAAii	CCCC	YYGGgg	BBB	Recorded by WSSS RODB	Recorded by VTBB RODB	Recorded by VTBB RODB
					RX Time UTC (hh:mm)	RX Time UTC (hh:mm)	TX Time UTC (hh:mm)
401	SAPK31	OPKC	160330		03:29	03:29	03:30
402	SAPK31	OPKC	160400		03:59	03:59	04:00
403	SAPK31	OPKC	160430		04:29	04:29	04:30
404	SAPK31	OPKC	160500		04:59	04:59	05:00
405	SAPK31	OPKC	160500	RRA	05:06	05:06	05:15
406	SAPK31	OPKC	160530		05:29	05:29	05:34
407	SAPK31	OPKC	160530	RRA	05:31	05:31	05:35
408	SAPK31	OPKC	160600		05:59	05:59	06:00
409	SAPK31	OPKC	160600	RRA	06:01	06:01	06:03
410	SAPK31	OPKC	160630		06:29	06:29	06:30
411	SAPK31	OPKC	160630	RRA	06:30	06:30	06:31
412	SAPK31	OPKC	160700		06:59	06:59	07:00
413	SAPK31	OPKC	160730		07:29	07:29	07:30
414	SAPK31	OPKC	160800		07:59	07:59	08:00
415	SAPK31	OPKC	160630	RRB	06:32	06:32	06:33
416	SAPS31	NFFN	160200		02:26	02:26	02:27
417	SAPS31	NFFN	160300		03:26	03:26	03:27
418	SAPS31	NFFN	160400		04:26	04:26	04:27
419	SAPS31	NFFN	160500		05:26	05:30	05:31
420	SAPS31	NFFN	160600		06:26	06:26	06:27
421	SAPS31	NFFN	160700		07:26	07:26	07:27
422	SAPS32	NFFN	160200		02:26	02:26	02:27
423	SAPS32	NFFN	160300		03:26	03:26	03:27
424	SAPS32	NFFN	160400		04:26	04:26	04:27
425	SAPS32	NFFN	160500		05:26	05:30	05:31
426	SAPS32	NFFN	160600		06:26	06:26	06:27
427	SAPS32	NFFN	160700		07:26	07:26	07:27
428	SASB31	VCCC	160200		02:19	02:19	02:21
429	SASB31	VCCC	160310		03:19	03:19	03:22
430	SASB31	VCCC	160410		04:19	04:19	04:21
431	SASB31	VCCC	160510		05:19	05:19	05:27
432	SASB31	VECC	160610		06:19	06:19	06:21
433	SASB31	VCCC	160710		07:19	07:19	07:21
434	SATH31	VTBB	160200		02:07	02:05	02:07
435	SATH31	VTBB	160200	RRA	02:18	02:17	02:18
436	SATH31	VTBB	160300		03:07	03:07	03:07
437	SATH31	VTBB	160300	RRA	03:17	03:17	03:17
438	SATH31	VTBB	160300	RRB	03:22	03:22	03:22
439	SATH31	VTBB	160400		04:07	04:05	04:07
440	SATH31	VTBB	160400	RRA	04:11	04:05	04:10
441	SATH31	VTBB	160400	RRB	04:12	04:10	04:11
442	SATH31	VTBB	160500		05:07	05:05	05:06
443	SATH31	VTBB	160500	RRA	05:19	05:17	05:19
444	SATH31	VTBB	160500	RRB	05:25	05:24	05:25

METAR Bulletins							
	TTAAii	CCCC	YYGGgg	BBB	Recorded by WSSS RODB	Recorded by VTBB RODB	Recorded by VTBB RODB
					RX Time UTC (hh:mm)	RX Time UTC (hh:mm)	TX Time UTC (hh:mm)
445	SATH31	VTBB	160500	RRC	05:27	05:26	05:27
446	SATH31	VTBB	160600		06:07	06:05	06:07
447	SATH31	VTBB	160600	RRA	06:09	06:08	06:09
448	SATH31	VTBB	160600	RRB	06:11	06:08	06:11
449	SATH31	VTBB	160700		07:07	07:05	07:07
450	SATH31	VTBB	160700	RRA	07:11	07:10	07:11
451	SATH32	VTBB	160200		02:07	02:05	02:07
452	SATH32	VTBB	160200	RRA	02:12	02:11	02:12
453	SATH32	VTBB	160200	RRB	02:16	02:13	02:16
454	SATH32	VTBB	160300		03:07	03:07	03:07
455	SATH32	VTBB	160300	RRA	03:08	03:08	03:08
456	SATH32	VTBB	160300	RRB	03:14	03:14	03:14
457	SATH32	VTBB	160300	RRC	03:34	03:34	03:34
458	SATH32	VTBB	160400		04:07	04:05	04:07
459	SATH32	VTBB	160400	RRA	04:14	04:12	04:14
460	SATH32	VTBB	160500		05:07	05:05	05:07
461	SATH32	VTBB	160500	RRA	05:09	05:08	05:09
462	SATH32	VTBB	160500	RRB	05:23	05:22	05:23
463	SATH32	VTBB	160500	RRC	05:25	05:24	05:25
464	SATH32	VTBB	160500	RRD	05:26	05:25	05:26
465	SATH32	VTBB	160500	RRE	05:33	05:32	05:33
466	SATH32	VTBB	160600		06:07	06:05	06:07
467	SATH32	VTBB	160700		07:07	07:05	07:07
468	SATH32	VTBB	160700	RRA	07:12	07:11	07:12
469	SATH33	VTBB	160200		02:08	02:05	02:07
470	SATH33	VTBB	160200	RRA	02:11	02:05	02:11
471	SATH33	VTBB	160200	RRB	02:12	02:10	02:13
472	SATH33	VTBB	160300		03:07	03:07	03:07
473	SATH33	VTBB	160300	RRA	03:19	03:19	03:19
474	SATH33	VTBB	160400		04:07	04:05	04:07
475	SATH33	VTBB	160400	RRA	04:10	04:05	04:09
476	SATH33	VTBB	160500		05:07	05:05	05:07
477	SATH33	VTBB	160500	RRA	05:10	05:09	05:10
478	SATH33	VTBB	160500	RRB	05:26	05:25	05:26
479	SATH33	VTBB	160500	RRC	05:29	05:28	05:29
480	SATH33	VTBB	160500	RRD	06:05	06:04	06:05
481	SATH33	VTBB	160600		06:07	06:05	06:07
482	SATH33	VTBB	160600	RRA	06:09	06:07	06:08
483	SATH33	VTBB	160600	RRB	06:16	06:13	06:16
484	SATH33	VTBB	160700		07:07	07:05	07:07
485	SATH33	VTBB	160700	RRA	07:09	07:08	07:09

**Summary Table of Switching of ASIA/PAC & MID OPMET Bulletins
on 16th February 2011**

TAFOR Bulletins							
	TTAAii	CCCC	YYGGgg	BBB	Recorded by WSSS RODB	Recorded by VTBB RODB	Recorded by VTBB RODB
					RX Time UTC (hh:mm)	RX Time UTC (hh:mm)	TX Time UTC (hh:mm)
1	FTAE31	VTBB	160500		05:03	05:00	05:02
2	FTAE31	VTBB	160500	RRA	05:03	05:02	05:02
3	FTAE31	VTBB	160500	RRB	05:25	05:24	05:25
4	FTAE31	VTBB	160500	RRC	05:31	05:29	05:30
5	FTAE32	VTBB	160500		05:01	05:00	05:01
6	FTAE32	VTBB	160500	RRA	05:04	05:02	05:03
7	FTAE32	VTBB	160500	RRB	05:09	05:08	05:08
8	FTAE32	VTBB	160500	RRC	05:10	05:09	05:10
9	FTAE32	VTBB	160500	RRD	05:38	05:37	05:38
10	FTAE33	VTBB	160500		05:02	05:00	05:02
11	FTAU31	YBBN	160400	AAA	04:34	04:34	04:36
12	FTAU31	YBBN	160400	AAB	04:41	04:41	04:42
13	FTAU31	YBBN	160500		05:00	05:00	05:04
14	FTAU32	YBBN	160200	AAC	02:32	02:32	02:34
15	FTAU32	YBBN	160200	AAD	02:35	02:35	02:46
16	FTAU32	YBBN	160500	AAA	05:02	05:02	05:08
17	FTAU32	YBBN	160500	AAB	05:07	05:07	05:15
18	FTAU32	YBBN	160500		05:00	05:00	05:21
19	FTAU32	YBBN	160500	RRA	05:20	05:20	05:28
20	FTAU32	YBBN	160700	AAC	07:44	07:44	07:45
21	FTAU32	YBBN	160700	AAD	07:55	07:56	07:56
22	FTAU33	YBBN	160400	AAB	04:28	04:28	04:29
23	FTAU33	YBBN	160400	AAC	04:54	04:54	04:56
24	FTAU33	YBBN	160500	PAA	05:00	05:00	05:04
25	FTAU33	YBBN	160500	PZB	05:00	05:00	05:04
26	FTAU33	YBBN	160500	AAA	05:03	05:03	05:10
27	FTAU33	YBBN	160500	RRA	05:20	05:20	05:28
28	FTAU33	YBBN	160800	AAB	08:00	08:00	08:01
29	FTAU34	YBBN	160400	AAB	04:13	04:13	04:17
30	FTAU34	YBBN	160400	AAC	04:14	04:14	04:18
31	FTAU34	YBBN	160500		05:00	05:00	05:04
32	FTAU35	YBBN	160700		07:00	07:00	07:01
33	FTBN31	OBBI	160500		05:07	05:07	05:16
34	FTBN32	OBBI	160500		05:13	05:13	05:22
35	FTCI31	ZBBB	160500		05:02	05:02	05:08
36	FTCI32	ZBBB	160500		05:02	05:02	05:21
37	FTCI32	ZBBB	160602	AAA	06:02	06:02	06:06
38	FTCI41	ZBBB	160500		05:03	05:02	05:09

39	FTHK31	VHHH	152300	AAA	02:45	02:45	02:46
TAFOR Bulletins							
					Recorded by WSSS RODB	Recorded by VTBB RODB	Recorded by VTBB RODB
	TTAAii	CCCC	YYGGgg	BBB	RX Time UTC (hh:mm)	RX Time UTC (hh:mm)	TX Time UTC (hh:mm)
40	FTHK31	VHHH	152300	AAB	04:04	04:03	04:05
41	FTHK31	VHHH	152300	AAC	04:18	04:18	04:19
42	FTHK31	VHHH	160500		05:04	05:03	05:11
43	FTHK31	VHHH	160500	CCA	05:57	05:57	05:58
44	FTHK31	VHHH	160500	CCB	06:07	06:07	06:10
45	FTHK31	VHHH	160500	CCC	06:08	06:08	06:12
46	FTIN31	VABB	160300	RRA	05:04	05:03	05:11
47	FTIN31	VABB	160300	RRB	05:04	05:03	05:11
48	FTIN32	VABB	160300		05:04	05:04	05:12
49	FTJP31	RJTD	160200		02:57	02:57	02:58
50	FTJP32	RJTD	160200		02:57	02:57	02:59
51	FTJP32	RJTD	160200	RRA	02:57	02:57	02:59
52	FTJP32	RJTD	160200	AAA	05:57	05:57	05:59
53	FTJP38	RJTD	160200		02:57	02:58	02:59
54	FTJP38	RJTD	160200	RRA	02:57	02:58	02:59
55	FTKO31	RKSI	160500		05:05	05:05	05:14
56	FTNG31	YBBN	160400	AAA	04:22	04:22	04:25
57	FTNG31	YBBN	160400		04:45	04:45	04:46
58	FTNZ31	NZKL	160459		04:59	No data	Not distribute
59	FTPK31	OPKC	160400		04:05	03:54	03:54
60	FTPS31	NFFN	160400		06:30	06:34	06:35
61	FTSD31	OEJD	160500		05:02	05:02	05:09
62	FTSR31	WSSS	160500		05:02	05:02	05:08
63	FTSR32	WSSS	160500		05:06	05:06	05:15
64	FTSR33	WSSS	160500		05:10	05:10	05:19
65	FTSR33	WSSS	160500	AAA	06:02	06:02	06:04
66	FTSR33	WSSS	160500	AAB	07:48	07:48	07:49
67	FTTH31	VTBB	160500		05:03	05:00	05:03
68	FTTH32	VTBB	160500		05:02	05:00	05:02
69	FTTH32	VTBB	160500	RRA	05:31	05:30	05:31
70	FTTH33	VTBB	160500		05:26	05:24	05:26
