



ICAO

*International Civil Aviation Organization*

**WORKING PAPER**

**Nineteenth Meeting of the Meteorological Information Exchange Working Group (MET/IE WG/19)**

Virtual meeting, 22 to 24 March 2021

---

**Agenda Item 3: Meteorological information exchange schemes**

**ASIA/PAC INTER-REGIONAL OPMET GATEWAY BACKUP EXERCISE BETWEEN IROG BANGKOK AND IROG SINGAPORE**

(Presented by Thailand)

**SUMMARY**

This paper presents the results of the sixteenth real-time Back-up exercise between IROG Bangkok and IROG Singapore in the event of IROG Singapore experiences technical problems, conducted on 22 September 2020.

**1. INTRODUCTION**

1.1 The OPMET/M TF/3 Meeting in March 2005 established the procedure for dissemination of ASIA/PAC OPMET Data to WAFC London by Inter-Regional OPMET Gateway (IROG) Bangkok in the event that IROG Singapore experiences technical problems.

1.2 In accordance with MET/IE WG programme, all RODB should conduct the annual IROG Back-up Tests in JAN/FEB to validate the dissemination process for notification between IROGs and to ensure that the procedures for handover and takeover of responsibility are functional.

1.3 In 2020, IROG Bangkok and IROG Singapore agreed to carry out the sixteenth real-time Back-up exercise on 22 September 2020 to avoid the Chinese New Year festival.

**2. DISCUSSION**

2.1 During the exercise, IROG Bangkok took over IROG Singapore's role in relaying the OPMET messages from ASIA/PAC to IROG London between 0200 UTC and 0800 UTC. Both IROGs monitored and recorded the reception and transmission of the OPMET messages (see Appendix A). A summary of the results is listed in Table 1 below:

**Agenda Item 3**

22-24/03/21

Type of Message	No. of bulletins Received by IROG		No. of bulletins routed to IROG (WAFC) London by IROG Bangkok	Successful Transmission Rate	No. of bulletins not successfully routed by IROG Bangkok	Bulletin Transit time recorded at IROG Bangkok		
	Singapore	Bangkok				Max	Min	Average
SA bulletins	487	487	487	100%	0	3	1	1.09
FT bulletins	87	87	87	100%	0	5	1	1.17
Total	574	574	574	100%	0			
Remark: Duplicated bulletins are excluded from both IROGs								

Table 1: Summary of the Reception and Transmission of OPMET messages

2.2 IROG Bangkok successfully routed 487 out of 487 (100%) METAR bulletins and 87 out of 87 (100%) TAF Bulletins to IROG (WAFC) London during the exercise. The average transit time 1.09 minutes for METAR and 1.17 minutes for TAF.

2.3 The results of exercises over a five-year period are listed as table 2 below:

Year	2016	2017	2018	2019	2020
RODB Bangkok Successfully transmitted	97.53%	99.45%	100%	100%	100%

Table 2: Summary of successful transmission

2.4 The exercise validated the dissemination process for notification between IROG Bangkok and IROG Singapore and the procedures for handover and takeover of responsibility are functional in the event IROG Singapore experiences technical problems.

**3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a) discuss the results of the IROG backup exercise; and
- b) review and improve the existing procedures, if required

-----

**Appendix A: Summary Table of Switching of ASIA/PAC and MID OPMET Bulletins on 22 September 2020**

**METAR Bulletins**

	TTAAii	CCCC	YYGGgg	BBB	RX Time UTC Recorded by WSSS RODB (hh:mm)	RX Time UTC Recorded by VTBB RODB (hh:mm)	TX Time UTC Recorded by VTBB RODB (hh:mm)
1	SAAE31	VTBB	220200		2:05	-	2:05
2	SAAE31	VTBB	220230		2:35	-	2:35
3	SAAE31	VTBB	220300		3:05	-	3:05
4	SAAE31	VTBB	220330		3:35	-	3:35
5	SAAE31	VTBB	220400		4:06	-	4:06
6	SAAE31	VTBB	220430		4:35	-	4:35
7	SAAE31	VTBB	220500		5:05	-	5:05
8	SAAE31	VTBB	220530		5:36	-	5:36
9	SAAE31	VTBB	220600		6:05	-	6:05
10	SAAE31	VTBB	220630		6:35	-	6:35
11	SAAE31	VTBB	220700		7:05	-	7:04
12	SAAE31	VTBB	220730		7:35	-	7:35
13	SAAE32	VTBB	220200		2:05	-	2:05
14	SAAE32	VTBB	220230		2:35	-	2:35
15	SAAE32	VTBB	220300		3:05	-	3:05
16	SAAE32	VTBB	220330		3:35	-	3:35
17	SAAE32	VTBB	220400		4:06	-	4:06
18	SAAE32	VTBB	220430		4:35	-	4:35
19	SAAE32	VTBB	220430	RRA	4:56	-	4:56
20	SAAE32	VTBB	220500		5:06	-	5:05
21	SAAE32	VTBB	220530		5:36	-	5:36
22	SAAE32	VTBB	220600		6:05	-	6:05
23	SAAE32	VTBB	220630		6:35	-	6:35
24	SAAE32	VTBB	220630	RRA	6:39	-	6:39
25	SAAE32	VTBB	220700		7:05	-	7:04
26	SAAE32	VTBB	220730		7:35	-	7:35
27	SAAE33	VTBB	220200		2:05	-	2:05
28	SAAE33	VTBB	220300		3:05	-	3:04
29	SAAE33	VTBB	220400		4:05	-	4:05
30	SAAE33	VTBB	220500		5:05	-	5:05
31	SAAE33	VTBB	220600		6:05	-	6:05
32	SAAE33	VTBB	220700		7:05	-	7:04
33	SAAE34	VTBB	220200		2:05	-	2:05
34	SAAE34	VTBB	220230		2:35	-	2:35
35	SAAE34	VTBB	220300		3:05	-	3:05
36	SAAE34	VTBB	220330		3:35	-	3:35
37	SAAE34	VTBB	220400		4:06	-	4:06
38	SAAE34	VTBB	220430		4:35	-	4:35
39	SAAE34	VTBB	220430	RRA	4:38	-	4:38
40	SAAE34	VTBB	220500		5:05	-	5:05
41	SAAE34	VTBB	220530		5:36	-	5:36
42	SAAE34	VTBB	220600		6:05	-	6:05
43	SAAE34	VTBB	220630		6:35	-	6:35
44	SAAE34	VTBB	220700		7:05	-	7:04
45	SAAE34	VTBB	220730		7:35	-	7:35
46	SAAR20	OEJD	220200		2:15	2:15	2:16
47	SAAR20	OEJD	220200	RRA	2:25	2:25	2:26
48	SAAR20	OEJD	220300		3:15	3:15	3:16
49	SAAR20	OEJD	220400		4:15	4:15	4:16
50	SAAR20	OEJD	220400	RRA	4:25	4:25	4:25
51	SAAR20	OEJD	220500		5:15	5:15	5:16
52	SAAR20	OEJD	220500	RRA	6:15	6:15	6:16

**Agenda Item 3**

22-24/03/21

**METAR Bulletins**

	TTAAii	CCCC	YYGGgg	BBB	RX Time UTC Recorded by WSSS RODB (hh:mm)	RX Time UTC Recorded by VTBB RODB (hh:mm)	TX Time UTC Recorded by VTBB RODB (hh:mm)
53	SAAR20	OEJD	220600		6:15	6:15	6:16
54	SAAR20	OEJD	220700		7:15	7:15	7:15
55	SAAU31	YBBN	220200		2:10	2:10	2:11
56	SAAU31	YBBN	220230		2:40	2:40	2:41
57	SAAU31	YBBN	220300		3:10	3:10	3:11
58	SAAU31	YBBN	220330		3:40	3:40	3:41
59	SAAU31	YBBN	220400		4:10	4:10	4:11
60	SAAU31	YBBN	220430		4:40	4:40	4:40
61	SAAU31	YBBN	220500		5:10	5:10	5:11
62	SAAU31	YBBN	220530		5:40	5:40	5:41
63	SAAU31	YBBN	220600		6:10	6:10	6:11
64	SAAU31	YBBN	220630		6:40	6:40	6:41
65	SAAU31	YBBN	220700		7:10	7:10	7:12
66	SAAU31	YBBN	220730		7:40	7:40	7:41
67	SAAU32	YBBN	220200		2:10	2:10	2:11
68	SAAU32	YBBN	220230		2:40	2:40	2:41
69	SAAU32	YBBN	220300		3:10	3:10	3:11
70	SAAU32	YBBN	220330		3:40	3:40	3:41
71	SAAU32	YBBN	220400		4:10	4:10	4:11
72	SAAU32	YBBN	220430		4:40	4:40	4:41
73	SAAU32	YBBN	220500		5:10	5:10	5:11
74	SAAU32	YBBN	220530		5:40	5:40	5:40
75	SAAU32	YBBN	220600		6:10	6:10	6:11
76	SAAU32	YBBN	220630		6:40	6:40	6:41
77	SAAU32	YBBN	220700		7:10	7:10	7:10
78	SAAU32	YBBN	220730		7:40	7:40	7:41
79	SAAU33	YBBN	220200		2:10	2:10	2:11
80	SAAU33	YBBN	220230		2:40	2:40	2:41
81	SAAU33	YBBN	220300		3:10	3:10	3:11
82	SAAU33	YBBN	220330		3:40	3:40	3:41
83	SAAU33	YBBN	220400		4:10	4:10	4:11
84	SAAU33	YBBN	220430		4:40	4:40	4:41
85	SAAU33	YBBN	220500		5:10	5:10	5:11
86	SAAU33	YBBN	220530		5:40	5:40	5:41
87	SAAU33	YBBN	220600		6:10	6:10	6:11
88	SAAU33	YBBN	220630		6:40	6:40	6:41
89	SAAU33	YBBN	220700		7:10	7:10	7:10
90	SAAU33	YBBN	220730		7:40	7:40	7:41
91	SAAU34	YBBN	220200		2:10	2:10	2:11
92	SAAU34	YBBN	220230		2:40	2:40	2:41
93	SAAU34	YBBN	220300		3:10	3:10	3:11
94	SAAU34	YBBN	220330		3:40	3:40	3:41
95	SAAU34	YBBN	220400		4:10	4:10	4:11
96	SAAU34	YBBN	220430		4:40	4:40	4:41
97	SAAU34	YBBN	220500		5:10	5:10	5:11
98	SAAU34	YBBN	220530		5:40	5:40	5:41
99	SAAU34	YBBN	220600		6:10	6:10	6:11
100	SAAU34	YBBN	220630		6:40	6:40	6:41
101	SAAU34	YBBN	220700		7:10	7:10	7:12
102	SAAU34	YBBN	220730		7:40	7:40	7:41
103	SAAU35	YBBN	220200		2:10	2:10	2:11
104	SAAU35	YBBN	220230		2:40	2:40	2:41
105	SAAU35	YBBN	220300		3:10	3:10	3:11

METAR Bulletins

	TTAAii	CCCC	YYGGgg	BBB	RX Time UTC Recorded by WSSS RODB (hh:mm)	RX Time UTC Recorded by VTBB RODB (hh:mm)	TX Time UTC Recorded by VTBB RODB (hh:mm)
106	SAAU35	YBBN	220330		3:40	3:40	3:41
107	SAAU35	YBBN	220400		4:10	4:10	4:11
108	SAAU35	YBBN	220430		4:40	4:40	4:41
109	SAAU35	YBBN	220500		5:10	5:10	5:11
110	SAAU35	YBBN	220530		5:40	5:40	5:41
111	SAAU35	YBBN	220600		6:10	6:10	6:11
112	SAAU35	YBBN	220630		6:40	6:40	6:41
113	SAAU35	YBBN	220700		7:10	7:10	7:12
114	SAAU35	YBBN	220730		7:40	7:40	7:41
115	SABN31	OBBI	220200		2:06	2:05	2:06
116	SABN31	OBBI	220230		2:22	2:22	2:23
117	SABN31	OBBI	220300		2:58	2:58	2:59
118	SABN31	OBBI	220300		3:06	3:05	3:06
119	SABN31	OBBI	220330		3:20	3:20	3:21
120	SABN31	OBBI	220400		3:52	3:51	3:52
121	SABN31	OBBI	220400		4:06	4:05	4:06
122	SABN31	OBBI	220430		4:27	4:26	4:28
123	SABN31	OBBI	220500		4:54	4:54	4:54
124	SABN31	OBBI	220500		5:06	5:05	5:06
125	SABN31	OBBI	220530		5:24	5:24	5:25
126	SABN31	OBBI	220600		5:52	5:52	5:53
127	SABN31	OBBI	220600		6:02	6:01	6:01
128	SABN31	OBBI	220630		6:27	6:27	6:28
129	SABN31	OBBI	220700		7:02	7:01	7:02
130	SABN31	OBBI	220700	RRA	7:01	7:01	7:02
131	SABN31	OBBI	220730	RRA	7:30	7:30	7:32
132	SABN31	OBBI	220800		7:56	7:56	7:57
133	SACI31	ZBBB	220200		2:05	2:06	2:07
134	SACI31	ZBBB	220230		2:35	2:35	2:36
135	SACI31	ZBBB	220300		3:05	3:06	3:08
136	SACI31	ZBBB	220330		3:35	3:35	3:36
137	SACI31	ZBBB	220400		4:05	4:05	4:07
138	SACI31	ZBBB	220430		4:35	4:35	4:35
139	SACI31	ZBBB	220500		5:05	5:05	5:06
140	SACI31	ZBBB	220530		5:35	5:35	5:36
141	SACI31	ZBBB	220600		6:05	6:06	6:07
142	SACI31	ZBBB	220630		6:35	6:35	6:36
143	SACI31	ZBBB	220700		7:05	7:05	7:06
144	SACI31	ZBBB	220730		7:35	7:35	7:36
145	SACI32	ZBBB	220200		2:05	2:06	2:07
146	SACI32	ZBBB	220300		3:05	3:06	3:08
147	SACI32	ZBBB	220400		4:05	4:05	4:07
148	SACI32	ZBBB	220500		5:05	5:06	5:08
149	SACI32	ZBBB	220600		6:05	6:06	6:07
150	SACI32	ZBBB	220700		7:05	7:05	7:07
151	SACI41	ZBBB	220200		2:05	2:06	2:07
152	SACI41	ZBBB	220300		3:05	3:06	3:08
153	SACI41	ZBBB	220400		4:05	4:05	4:07
154	SACI41	ZBBB	220500		5:05	5:06	5:08
155	SACI41	ZBBB	220600		6:05	6:06	6:07
156	SACI41	ZBBB	220700		7:05	7:05	7:07
157	SAHK31	VHHH	220200		2:06	2:06	2:07
158	SAHK31	VHHH	220200	CCA	2:08	2:08	2:08
159	SAHK31	VHHH	220230		2:36	2:36	2:36

**Agenda Item 3**

22-24/03/21

**METAR Bulletins**

	TTAAii	CCCC	YYGGgg	BBB	RX Time UTC Recorded by WSSB RODB (hh:mm)	RX Time UTC Recorded by VTBB RODB (hh:mm)	TX Time UTC Recorded by VTBB RODB (hh:mm)
160	SAHK31	VHHH	220300		3:06	3:06	3:07
161	SAHK31	VHHH	220330		3:36	3:36	3:37
162	SAHK31	VHHH	220400		4:06	4:06	4:07
163	SAHK31	VHHH	220430		4:36	4:36	4:37
164	SAHK31	VHHH	220500		5:07	5:07	5:09
165	SAHK31	VHHH	220530		5:36	5:36	5:36
166	SAHK31	VHHH	220600		6:10	6:10	6:11
167	SAHK31	VHHH	220600	RRA	6:13	6:13	6:13
168	SAHK31	VHHH	220630		6:36	6:36	6:36
169	SAHK31	VHHH	220700		7:10	7:10	7:10
170	SAHK31	VHHH	220730		7:36	7:36	7:37
171	SAID31	WIII	220200		2:08	2:08	2:08
172	SAID31	WIII	220200		2:10	2:10	2:10
173	SAID31	WIII	220230		2:38	2:38	2:39
174	SAID31	WIII	220230		2:40	2:40	2:41
175	SAID31	WIII	220300		3:08	3:09	3:09
176	SAID31	WIII	220300		3:10	3:10	3:11
177	SAID31	WIII	220330		3:39	3:39	3:40
178	SAID31	WIII	220330		3:40	3:40	3:41
179	SAID31	WIII	220400		4:09	4:09	4:10
180	SAID31	WIII	220400		4:10	4:10	4:11
181	SAID31	WIII	220430		4:39	4:39	4:39
182	SAID31	WIII	220430		4:40	4:40	4:41
183	SAID31	WIII	220500		5:10	5:09	5:10
184	SAID31	WIII	220500		5:10	5:10	5:11
185	SAID31	WIII	220530		5:39	5:39	5:40
186	SAID31	WIII	220530		5:40	5:40	5:41
187	SAID31	WIII	220600		6:09	6:09	6:11
188	SAID31	WIII	220600		6:10	6:10	6:11
189	SAID31	WIII	220630		6:40	6:39	6:40
190	SAID31	WIII	220630		6:40	6:40	6:41
191	SAID31	WIII	220700		7:10	7:10	7:12
192	SAID31	WIII	220700		7:10	7:10	7:12
193	SAID31	WIII	220730		7:40	7:40	7:41
194	SAID31	WIII	220730		7:40	7:40	7:41
195	SAID32	WIII	220200		2:08	2:08	2:08
196	SAID32	WIII	220200		2:10	2:10	2:11
197	SAID32	WIII	220230		2:38	2:38	2:39
198	SAID32	WIII	220230		2:40	2:40	2:41
199	SAID32	WIII	220300		3:09	3:09	3:09
200	SAID32	WIII	220300		3:10	3:10	3:11
201	SAID32	WIII	220330		3:39	3:39	3:40
202	SAID32	WIII	220330		3:40	3:40	3:41
203	SAID32	WIII	220400		4:09	4:09	4:10
204	SAID32	WIII	220400		4:10	4:10	4:12
205	SAID32	WIII	220430		4:39	4:39	4:41
206	SAID32	WIII	220430		4:40	4:40	4:41
207	SAID32	WIII	220430		4:40	4:40	4:41
208	SAID32	WIII	220430		4:41	4:40	4:42
209	SAID32	WIII	220500		5:10	5:09	5:10
210	SAID32	WIII	220500		5:10	5:10	5:11
211	SAID32	WIII	220530		5:39	5:39	5:40
212	SAID32	WIII	220530		5:40	5:40	5:41

METAR Bulletins

	TAAii	CCCC	YYGGgg	BBB	RX Time UTC Recorded by WSSS RODB (hh:mm)	RX Time UTC Recorded by VTBB RODB (hh:mm)	TX Time UTC Recorded by VTBB RODB (hh:mm)
213	SAID32	WIII	220600		6:09	6:09	6:11
214	SAID32	WIII	220600		6:10	6:10	6:12
215	SAID32	WIII	220630		6:40	6:40	6:41
216	SAID32	WIII	220630		6:40	6:40	6:41
217	SAID32	WIII	220630		6:41	6:41	6:41
218	SAID32	WIII	220700		7:10	7:10	7:12
219	SAID32	WIII	220700		7:10	7:10	7:12
220	SAID32	WIII	220730		7:40	7:40	7:41
221	SAID32	WIII	220730		7:40	7:40	7:41
222	SAID33	WIII	220200		2:08	2:08	2:10
223	SAID33	WIII	220200		2:10	2:10	2:11
224	SAID33	WIII	220230		2:38	2:38	2:40
225	SAID33	WIII	220230		2:40	2:40	2:41
226	SAID33	WIII	220300		3:09	3:09	3:09
227	SAID33	WIII	220300		3:10	3:10	3:11
228	SAID33	WIII	220330		3:39	3:39	3:40
229	SAID33	WIII	220330		3:40	3:40	3:41
230	SAID33	WIII	220400		4:09	4:09	4:10
231	SAID33	WIII	220400		4:10	4:10	4:12
232	SAID33	WIII	220430		4:39	4:39	4:41
233	SAID33	WIII	220430		4:40	4:40	4:41
234	SAID33	WIII	220500		5:10	5:09	5:10
235	SAID33	WIII	220500		5:10	5:10	5:11
236	SAID33	WIII	220530		5:39	5:39	5:40
237	SAID33	WIII	220530		5:40	5:40	5:42
238	SAID33	WIII	220600		6:09	6:09	6:11
239	SAID33	WIII	220600		6:10	6:10	6:12
240	SAID33	WIII	220630		6:40	6:40	6:41
241	SAID33	WIII	220630		6:40	6:40	6:41
242	SAID33	WIII	220700		7:10	7:10	7:12
243	SAID33	WIII	220700		7:10	7:10	7:12
244	SAID33	WIII	220730		7:40	7:40	7:41
245	SAID33	WIII	220730		7:40	7:40	7:41
246	SAID33	WIII	220730		7:41	7:41	7:42
247	SAIN31	VABB	220200		2:19	2:19	2:20
248	SAIN31	VABB	220230		2:49	2:49	2:50
249	SAIN31	VABB	220300		3:19	3:18	3:19
250	SAIN31	VABB	220330		3:49	3:49	3:50
251	SAIN31	VABB	220400		4:19	4:19	4:19
252	SAIN31	VABB	220430		4:49	4:48	4:49
253	SAIN31	VABB	220500		5:19	5:19	5:20
254	SAIN31	VABB	220530		5:55	5:55	5:57
255	SAIN31	VABB	220600		6:19	6:18	6:20
256	SAIN31	VABB	220630		6:49	6:49	6:50
257	SAIN31	VABB	220700		7:19	7:19	7:19
258	SAIN31	VABB	220730		7:49	7:48	7:49
259	SAIN32	VIDP	220200		2:06	2:06	2:07
260	SAIN32	VIDP	220200	RRA	2:11	2:11	2:11
261	SAIN32	VIDP	220230		2:36	2:36	2:36
262	SAIN32	VIDP	220300		3:06	3:06	3:07
263	SAIN32	VIDP	220300	RRA	3:11	3:11	3:12
264	SAIN32	VIDP	220330		3:36	3:36	3:37
265	SAIN32	VIDP	220330	RRA	3:41	3:41	3:41
266	SAIN32	VIDP	220400		4:06	4:06	4:07

## Agenda Item 3

22-24/03/21

## METAR Bulletins

	TTAAii	CCCC	YYGGgg	BBB	RX Time UTC Recorded by WSSB RODB (hh:mm)	RX Time UTC Recorded by VTBB RODB (hh:mm)	TX Time UTC Recorded by VTBB RODB (hh:mm)
267	SAIN32	VIDP	220430		4:36	4:36	4:37
268	SAIN32	VIDP	220500		5:06	5:06	5:08
269	SAIN32	VIDP	220500	RRA	5:11	5:11	5:13
270	SAIN32	VIDP	220530		5:36	5:36	5:36
271	SAIN32	VIDP	220530	RRA	5:41	5:41	5:42
272	SAIN32	VIDP	220600		6:06	6:06	6:07
273	SAIN32	VIDP	220600	RRA	6:11	6:11	6:12
274	SAIN32	VIDP	220630		6:36	6:36	6:36
275	SAIN32	VIDP	220700		7:06	7:06	7:07
276	SAIN32	VIDP	220730		7:36	7:36	7:37
277	SAIN32	VIDP	220730	RRA	7:41	7:41	7:42
278	SAIN33	VECC	220200		2:06	2:06	2:07
279	SAIN33	VECC	220200	RRA	2:15	2:15	2:16
280	SAIN33	VECC	220230		2:35	2:35	2:36
281	SAIN33	VECC	220300		3:06	3:06	3:07
282	SAIN33	VECC	220330		3:36	3:35	3:36
283	SAIN33	VECC	220400		4:05	4:05	4:07
284	SAIN33	VECC	220400	RRA	4:16	4:15	4:16
285	SAIN33	VECC	220430		4:35	4:36	4:37
286	SAIN33	VECC	220430	RRA	4:45	4:45	4:46
287	SAIN33	VECC	220500		5:06	5:05	5:06
288	SAIN33	VECC	220500	RRA	5:16	5:15	5:16
289	SAIN33	VECC	220530		5:35	5:35	5:36
290	SAIN33	VECC	220530	RRA	5:46	5:45	5:46
291	SAIN33	VECC	220600		6:05	6:05	6:07
292	SAIN33	VECC	220600	RRA	6:16	6:15	6:16
293	SAIN33	VECC	220630		6:36	6:36	6:36
294	SAIN33	VECC	220700		7:05	7:05	7:07
295	SAIN33	VECC	220700	RRA	7:15	7:15	7:17
296	SAIN33	VECC	220730		7:36	7:35	7:37
297	SAIN33	VECC	220730	RRA	7:45	7:45	7:46
298	SAIR31	OIII	220200		2:03	2:03	2:03
299	SAIR31	OIII	220230		2:33	2:33	2:34
300	SAIR31	OIII	220300		3:03	3:03	3:04
301	SAIR31	OIII	220300	RRA	3:05	3:04	3:07
302	SAIR31	OIII	220330		3:33	3:33	3:33
303	SAIR31	OIII	220400		4:03	4:03	4:04
304	SAIR31	OIII	220430		4:33	4:33	4:34
305	SAIR31	OIII	220500		5:03	5:03	5:03
306	SAIR31	OIII	220530		5:33	5:33	5:34
307	SAIR31	OIII	220530	RRA	5:38	5:38	5:39
308	SAIR31	OIII	220600		6:03	6:03	6:04
309	SAIR31	OIII	220600	RRA	6:48	6:48	6:49
310	SAIR31	OIII	220630		6:33	6:33	6:33
311	SAIR31	OIII	220630	RRA	6:33	6:33	6:35
312	SAIR31	OIII	220630	RRB	6:36	6:36	6:37
313	SAIR31	OIII	220630	RRC	6:48	6:48	6:49
314	SAIR31	OIII	220700		7:03	7:03	7:04
315	SAIR31	OIII	220730		7:33	7:33	7:33
316	SAJP31	RJTD	220200		2:06	2:06	2:07
317	SAJP31	RJTD	220300		3:06	3:06	3:08
318	SAJP31	RJTD	220400		4:06	4:06	4:08
319	SAJP31	RJTD	220500		5:06	5:06	5:08

METAR Bulletins

	TTAAii	CCCC	YYGGgg	BBB	RX Time UTC Recorded by WSSS RODB (hh:mm)	RX Time UTC Recorded by VTBB RODB (hh:mm)	TX Time UTC Recorded by VTBB RODB (hh:mm)
320	SAJP31	RJTD	220600		6:06	6:06	6:07
321	SAJP31	RJTD	220700		7:06	7:06	7:07
322	SAJP32	RJTD	220200		2:06	2:06	2:08
323	SAJP32	RJTD	220200	RRA	2:06	2:06	2:07
324	SAJP32	RJTD	220300		3:06	3:06	3:08
325	SAJP32	RJTD	220300	RRA	3:06	3:06	3:08
326	SAJP32	RJTD	220400		4:06	4:06	4:08
327	SAJP32	RJTD	220400	RRA	4:06	4:06	4:08
328	SAJP32	RJTD	220500		5:06	5:06	5:08
329	SAJP32	RJTD	220500	RRA	5:06	5:06	5:08
330	SAJP32	RJTD	220600		6:06	6:06	6:07
331	SAJP32	RJTD	220600	RRA	6:06	6:06	6:07
332	SAJP32	RJTD	220700		7:06	7:06	7:08
333	SAJP32	RJTD	220700	RRA	7:06	7:06	7:08
334	SAJP38	RJTD	220200		2:06	2:06	2:08
335	SAJP38	RJTD	220200	RRA	2:06	2:06	2:07
336	SAJP38	RJTD	220300		3:06	3:06	3:08
337	SAJP38	RJTD	220300	RRA	3:06	3:06	3:08
338	SAJP38	RJTD	220400		4:06	4:06	4:08
339	SAJP38	RJTD	220400	RRA	4:06	4:06	4:08
340	SAJP38	RJTD	220500		5:06	5:06	5:08
341	SAJP38	RJTD	220500	RRA	5:06	5:06	5:08
342	SAJP38	RJTD	220600		6:06	6:06	6:08
343	SAJP38	RJTD	220600	RRA	6:06	6:06	6:08
344	SAJP38	RJTD	220700		7:06	7:06	7:08
345	SAJP38	RJTD	220700	RRA	7:06	7:06	7:08
346	SAKO31	RKSI	220200		2:04	2:04	2:05
347	SAKO31	RKSI	220230		2:34	2:34	2:35
348	SAKO31	RKSI	220300		3:05	3:04	3:07
349	SAKO31	RKSI	220330		3:34	3:34	3:35
350	SAKO31	RKSI	220400		4:04	4:04	4:05
351	SAKO31	RKSI	220400	RRA	4:04	4:04	4:05
352	SAKO31	RKSI	220430		4:34	4:34	4:35
353	SAKO31	RKSI	220500		5:04	5:04	5:05
354	SAKO31	RKSI	220530		5:35	5:34	5:35
355	SAKO31	RKSI	220600		6:04	6:04	6:06
356	SAKO31	RKSI	220630		6:34	6:34	6:35
357	SAKO31	RKSI	220700		7:04	7:04	7:06
358	SAKO31	RKSI	220730		7:34	7:34	7:34
359	SAMS31	WMKK	220200		2:08	2:08	2:09
360	SAMS31	WMKK	220200		2:08	2:08	2:09
361	SAMS31	WMKK	220230		2:38	2:38	2:39
362	SAMS31	WMKK	220230		2:38	2:38	2:39
363	SAMS31	WMKK	220300		3:08	3:08	3:10
364	SAMS31	WMKK	220300		3:08	3:08	3:10
365	SAMS31	WMKK	220330		3:38	3:38	3:38
366	SAMS31	WMKK	220330		3:38	3:38	3:38
367	SAMS31	WMKK	220400		4:08	4:08	4:09
368	SAMS31	WMKK	220400		4:08	4:08	4:09
369	SAMS31	WMKK	220430		4:38	4:37	4:38
370	SAMS31	WMKK	220430		4:38	4:38	4:38
371	SAMS31	WMKK	220500		5:08	5:08	5:09
372	SAMS31	WMKK	220500		5:08	5:08	5:09
373	SAMS31	WMKK	220530		5:38	5:38	5:39

## Agenda Item 3

22-24/03/21

## METAR Bulletins

	TTAAii	CCCC	YYGGgg	BBB	RX Time UTC Recorded by WSSS RODB (hh:mm)	RX Time UTC Recorded by VTBB RODB (hh:mm)	TX Time UTC Recorded by VTBB RODB (hh:mm)
374	SAMS31	WMKK	220530		5:38	5:38	5:39
375	SAMS31	WMKK	220530	CCA	6:04	6:04	6:05
376	SAMS31	WMKK	220600		6:08	6:08	6:08
377	SAMS31	WMKK	220600		6:08	6:08	6:08
378	SAMS31	WMKK	220630		6:38	6:38	6:38
379	SAMS31	WMKK	220630		6:38	6:38	6:39
380	SAMS31	WMKK	220700		7:08	7:08	7:09
381	SAMS31	WMKK	220700		7:08	7:08	7:09
382	SAMS31	WMKK	220700	RRA	7:16	7:16	7:17
383	SAMS31	WMKK	220730		7:38	7:37	7:38
384	SAMS31	WMKK	220730		7:38	7:37	7:38
385	SAMS38	WMKK	220200		2:08	2:08	2:09
386	SAMS38	WMKK	220200		2:08	2:08	2:09
387	SAMS38	WMKK	220200	RRA	2:10	2:10	2:11
388	SAMS38	WMKK	220300		3:08	3:08	3:10
389	SAMS38	WMKK	220300		3:08	3:08	3:10
390	SAMS38	WMKK	220400		4:08	4:08	4:09
391	SAMS38	WMKK	220400		4:08	4:08	4:09
392	SAMS38	WMKK	220500		5:08	5:08	5:09
393	SAMS38	WMKK	220500		5:08	5:08	5:09
394	SAMS38	WMKK	220600		6:08	6:08	6:08
395	SAMS38	WMKK	220600		6:08	6:08	6:09
396	SAMS38	WMKK	220700		7:08	7:08	7:09
397	SAMS38	WMKK	220700		7:08	7:08	7:09
398	SANG31	YBBN	220200		2:10	2:10	2:11
399	SANG31	YBBN	220200	RRA	2:20	2:20	2:21
400	SANG31	YBBN	220300		3:10	3:10	3:11
401	SANG31	YBBN	220400		4:10	4:10	4:10
402	SANG31	YBBN	220400	RRA	4:20	4:20	4:20
403	SANG31	YBBN	220500		5:10	5:10	5:11
404	SANG31	YBBN	220500	RRA	5:20	5:19	5:20
405	SANG31	YBBN	220600		6:10	6:10	6:11
406	SANG31	YBBN	220700		7:10	7:10	7:10
407	SANG31	YBBN	220700	RRA	7:20	7:20	7:20
408	SANZ31	NZKL	220200		2:07	2:07	2:08
409	SANZ31	NZKL	220230		2:37	2:37	2:38
410	SANZ31	NZKL	220300		3:07	3:07	3:08
411	SANZ31	NZKL	220330		3:37	3:37	3:38
412	SANZ31	NZKL	220400		4:07	4:07	4:08
413	SANZ31	NZKL	220430		4:37	4:37	4:38
414	SANZ31	NZKL	220500		5:07	5:06	5:08
415	SANZ31	NZKL	220530		5:37	5:37	5:37
416	SANZ31	NZKL	220600		6:07	6:06	6:08
417	SANZ31	NZKL	220630		6:37	6:37	6:37
418	SANZ31	NZKL	220700		7:07	7:06	7:08
419	SANZ31	NZKL	220730		7:37	7:37	7:37
420	SAPK31	OPKC	220159		2:01	2:01	2:02
421	SAPK31	OPKC	220229		2:30	2:30	2:31
422	SAPK31	OPKC	220259		3:01	3:01	3:01
423	SAPK31	OPKC	220329		3:42	3:42	3:43
424	SAPK31	OPKC	220359		4:00	4:00	4:01
425	SAPK31	OPKC	220429		4:31	4:31	4:32
426	SAPK31	OPKC	220459		5:03	5:03	5:05

**METAR Bulletins**

	TTAAii	CCCC	YYGGgg	BBB	RX Time UTC Recorded by WSSS RODB (hh:mm)	RX Time UTC Recorded by VTBB RODB (hh:mm)	TX Time UTC Recorded by VTBB RODB (hh:mm)
427	SAPK31	OPKC	220529		5:30	5:30	5:31
428	SAPK31	OPKC	220525	RRA	5:37	5:37	5:37
429	SAPK31	OPKC	220555	RRA	6:17	6:17	6:17
430	SAPK31	OPKC	220559		6:02	6:02	6:03
431	SAPK31	OPKC	220629		6:31	6:31	6:32
432	SAPK31	OPKC	220630	RRA	6:32	6:32	6:32
433	SAPK31	OPKC	220659		7:02	7:02	7:03
434	SAPK31	OPKC	220729		7:31	7:31	7:32
435	SAPS31	NFFN	220200		2:19	2:19	2:20
436	SAPS31	NFFN	220300		3:15	3:15	3:16
437	SAPS31	NFFN	220400		4:15	4:15	4:15
438	SAPS31	NFFN	220500		5:15	5:15	5:16
439	SAPS31	NFFN	220600		6:06	6:06	6:08
440	SAPS31	NFFN	220700		7:06	7:06	7:07
441	SAPS32	NFFN	220200		2:04	2:04	2:05
442	SAPS32	NFFN	220300		3:04	3:04	3:07
443	SAPS32	NFFN	220400		4:10	4:10	4:12
444	SAPS32	NFFN	220500		5:05	5:05	5:06
445	SAPS32	NFFN	220600		6:05	6:05	6:06
446	SAPS32	NFFN	220700		7:15	7:15	7:15
447	SASB31	VCCC	220210		2:20	2:20	2:21
448	SASB31	VCCC	220310		3:20	3:20	3:21
449	SASB31	VCCC	220410		4:20	4:20	4:20
450	SASB31	VCCC	220510		5:21	5:20	5:21
451	SASB31	VCCC	220610		6:20	6:20	6:21
452	SASB31	VCCC	220710		7:20	7:20	7:20
453	SASD31	OEJD	220200		2:00	2:00	2:01
454	SASD31	OEJD	220200	RRA	2:05	2:05	2:06
455	SASD31	OEJD	220300		3:00	3:00	3:00
456	SASD31	OEJD	220300	RRA	3:05	3:05	3:07
457	SASD31	OEJD	220400		4:00	4:00	4:01
458	SASD31	OEJD	220400	RRA	4:05	4:05	4:07
459	SASD31	OEJD	220500		5:00	5:00	5:01
460	SASD31	OEJD	220500	RRA	5:05	5:05	5:06
461	SASD31	OEJD	220600		6:00	6:00	6:00
462	SASD31	OEJD	220700		7:00	7:00	7:01
463	SATH31	VTBB	220200		2:05	-	2:05
464	SATH31	VTBB	220300		3:05	-	3:04
465	SATH31	VTBB	220400		4:05	-	4:05
466	SATH31	VTBB	220500		5:05	-	5:05
467	SATH31	VTBB	220600		6:05	-	6:05
468	SATH31	VTBB	220700		7:04	-	7:04
469	SATH32	VTBB	220200		2:05	-	2:05
470	SATH32	VTBB	220200	RRA	2:30	-	2:30
471	SATH32	VTBB	220300		3:05	-	3:04
472	SATH32	VTBB	220300	RRA	3:30	-	3:29
473	SATH32	VTBB	220400		4:05	-	4:05
474	SATH32	VTBB	220400	RRA	4:30	-	4:30
475	SATH32	VTBB	220500		5:05	-	5:05
476	SATH32	VTBB	220500	RRA	5:30	-	5:30
477	SATH32	VTBB	220600		6:05	-	6:05
478	SATH32	VTBB	220600	RRA	6:32	-	6:32
479	SATH32	VTBB	220700		7:04	-	7:04
480	SATH32	VTBB	220700	RRA	7:31	-	7:31

**Agenda Item 3**

22-24/03/21

**METAR Bulletins**

	TTAAii	CCCC	YYGGgg	BBB	RX Time UTC Recorded by WSSS RODB (hh:mm)	RX Time UTC Recorded by VTBB RODB (hh:mm)	TX Time UTC Recorded by VTBB RODB (hh:mm)
481	SATH33	VTBB	220200		2:05	-	2:05
482	SATH33	VTBB	220300		3:05	-	3:05
483	SATH33	VTBB	220300	RRA	3:07	-	3:07
484	SATH33	VTBB	220400		4:06	-	4:05
485	SATH33	VTBB	220500		5:05	-	5:05
486	SATH33	VTBB	220600		6:05	-	6:05
487	SATH33	VTBB	220700		7:05	-	7:04

**TAF Bulletins**

	TTAAii	CCCC	YYGGgg	BBB	RX Time UTC Recorded by WSSS RODB (hh:mm)	RX Time UTC Recorded by VTBB RODB (hh:mm)	TX Time UTC Recorded by VTBB RODB (hh:mm)
1	FTAE31	VTBB	220500		5:35	-	5:35
2	FTAE32	VTBB	220500		5:36	-	5:35
3	FTAE33	VTBB	220500		5:35	-	5:35
4	FTAE34	VTBB	220500		5:36	-	5:36
5	FTAR20	OEJD	220500		5:30	-	5:31
6	FTAR20	OEJD	220500		5:30	-	5:31
7	FTAU31	YBBN	220300		3:23	3:23	3:24
8	FTAU31	YBBN	220500		5:01	5:01	5:02
9	FTAU31	YBBN	220500		5:27	5:27	5:28
10	FTAU31	YBBN	220500		5:35	5:35	5:35
11	FTAU31	YBBN	220500		5:53	5:54	5:54
12	FTAU31	YBBN	220600		6:38	6:38	6:38
13	FTAU31	YBBN	220600		6:42	6:42	6:42
14	FTAU31	YBBN	220700		7:54	7:54	7:54
15	FTAU32	YBBN	220300		3:16	3:16	3:17
16	FTAU32	YBBN	220300		3:26	3:26	3:27
17	FTAU32	YBBN	220300		3:38	3:38	3:38
18	FTAU32	YBBN	220300		3:52	3:52	3:53
19	FTAU32	YBBN	220500		5:08	5:08	5:08
20	FTAU32	YBBN	220500		5:19	5:19	5:20
21	FTAU32	YBBN	220500		5:35	5:34	5:35
22	FTAU32	YBBN	220500		5:35	5:35	5:35
23	FTAU32	YBBN	220500	RRA	5:35	5:35	5:35
24	FTAU32	YBBN	220500	RRA	5:45	5:45	5:45
25	FTAU32	YBBN	220700		7:16	7:16	7:17
26	FTAU32	YBBN	220700		7:55	7:55	7:56
27	FTAU33	YBBN	220300		3:44	3:44	3:45
28	FTAU33	YBBN	220400		4:17	4:17	4:18
29	FTAU33	YBBN	220500		5:13	5:13	5:13
30	FTAU33	YBBN	220500		5:27	5:27	5:27
31	FTAU33	YBBN	220500		5:35	5:35	5:35
32	FTAU33	YBBN	220700		7:42	7:42	7:43
33	FTAU34	YBBN	220400		4:56	4:56	4:57
34	FTAU34	YBBN	220500		5:05	5:00	5:01
35	FTAU35	YBBN	220300		3:29	3:29	3:29
36	FTAU35	YBBN	220500		5:30	5:30	5:31
37	FTAU35	YBBN	220700		7:00	6:59	7:00
38	FTAU35	YBBN	220700	RRA	7:10	7:10	7:10
39	FTAU35	YBBN	220700	RRA	7:20	7:20	7:20

**TAF Bulletins**

	TTAAii	CCCC	YYGGgg	BBB	RX Time UTC Recorded by WSSS RODB (hh:mm)	RX Time UTC Recorded by VTBB RODB (hh:mm)	TX Time UTC Recorded by VTBB RODB (hh:mm)
40	FTBN31	OBBI	220500		4:42	4:41	4:42
41	FTBN31	OBBI	220500		4:49	4:49	4:49
42	FTCI31	ZBBB	220400		4:00	4:00	4:01
43	FTCI32	ZBBB	220400		4:00	4:01	4:02
44	FTCI32	ZBBB	220432	RRA	4:32	4:32	4:33
45	FTCI41	ZBBB	220400		4:00	4:01	4:02
46	FTHK31	VHHH	220500		5:20	5:20	5:21
47	FTHK31	VHHH	220500	RRA	5:20	5:20	5:21
48	FTIN31	VABB	220500	RRA	5:53	5:49	5:50
49	FTIN31	VABB	220500	RRB	5:53	5:53	5:54
50	FTIN31	VABB	220500	CCA	5:57	5:57	5:58
51	FTIN31	VABB	220500	CCB	5:59	5:59	6:00
52	FTIN31	VABB	220500	CCC	7:39	7:38	7:39
53	FTIN32	VABB	220500	RRA	5:54	5:54	5:55
54	FTIN32	VABB	220500	RRB	5:55	5:54	5:55
55	FTIN32	VABB	220500	RRC	5:55	5:55	5:55
56	FTIR31	OIII	220500	RRA	6:02	6:02	6:03
57	FTIR32	OIII	220500	RRA	6:03	6:03	6:04
58	FTIR33	OIII	220500	RRA	6:03	6:03	6:04
59	FTIR34	OIII	220500	RRA	6:03	6:03	6:04
60	FTJP31	RJTD	220500		5:27	5:27	5:29
61	FTJP32	RJTD	220500		5:27	5:27	5:29
62	FTJP32	RJTD	220500	RRA	5:27	5:27	5:29
63	FTJP38	RJTD	212300	AAA	3:20	3:20	3:22
64	FTJP38	RJTD	220500		5:27	5:27	5:29
65	FTJP38	RJTD	220500	RRA	5:27	5:27	5:29
66	FTJP38	RJTD	220500	RRB	5:27	5:27	5:29
67	FTJP38	RJTD	220500	AAA	7:37	7:37	7:38
68	FTKO31	RKSI	220500		5:05	5:05	5:06
69	FTKO31	RKSI	220500	RRA	5:06	5:06	5:07
70	FTNG31	YBBN	220400		4:45	4:45	4:46
71	FTNG31	YBBN	220500	RRA	5:05	5:05	5:06
72	FTNG31	YBBN	220500	RRA	5:15	5:15	5:15
73	FTNZ31	NZKL	212300	AAA	3:08	3:08	3:09
74	FTNZ31	NZKL	220308	AAA	3:08	3:08	3:09
75	FTNZ31	NZKL	220500		5:12	5:12	5:12
76	FTNZ31	NZKL	220512		5:12	5:12	5:13
77	FTPK31	OPKC	220330		4:07	4:07	4:07
78	FTPS31	NFFN	220500		5:45	5:45	5:45
79	FTSD31	OEJD	220500		5:00	5:00	5:01
80	FTSD31	OEJD	220500	RRA	5:05	5:05	5:06
81	FTSR31	WSSS	220500		5:07	5:07	5:07
82	FTSR32	WSSS	220500		5:08	5:08	5:10
83	FTSR33	WSSS	220500		5:11	5:11	5:13
84	FTTH31	VTBB	220500		5:35	-	5:35
85	FTTH32	VTBB	220500		5:36	-	5:35
86	FTTH33	VTBB	220500		5:35	-	5:35
87	FTTM31	YBBN	220500		5:35	5:35	5:40