

**PREPARATION FOR WRC-2003
AND
REPORT OF JMA ACTIVITIES ON THE FREQUENCY MATTERS**

In order to protect and obtain necessary frequency bands for meteorological services, JMA has carried out various activities with CGMS and WMO after WARC-02.

This document reports JMA activities on the frequency matters and the preparation for the next World Radiocommunication Conference (WRC-2003), focussing upon items regarding the meteorological satellite service in the preliminary agenda for WRC-2003, and is the JMA responses to Action 28.15 and Action 28.17.

Action Required: None

PREPARATION FOR WRC-2003 AND REPORT OF JMA ACTIVITIES ON THE FREQUENCY MATTERS

1 INTRODUCTION

In order to protect and obtain necessary frequency bands for meteorological services, JMA has carried out various activities with CGMS and WMO after WARC-02.

This document reports on JMA activities regarding the frequency matters and the preparation for the next World Radiocommunication Conference (WRC-2003), focussing upon items regarding the meteorological satellite service (MetSat) in the preliminary agenda for WRC-2003.

1.1 THE PRELIMINARY AGENDA FOR THE NEXT WRC-2003

It was confirmed at the WG-I (TELECOMMUNICATION) in the CGMS-XXVIII that the following items in the preliminary agenda for the WRC-2003 are the most important matter for the CGMS members.

(1) Agenda Item 1.20 – Additional MSS Allocations below 1 GHz

This item considers additional allocations on a worldwide basis for the non-GSO MSS with service links operating below 1 GHz in accordance with Resolution 214. This item needs to be closely monitored as several Meteorological Satellite Service (MetSat) and Meteorological Aids Service (MetAids) applications could be affected. Although Resolution 219 (WRC-97) on the band 401 – 406 MHz was suppressed, it shall be noted that Resolution 214 (Rev. Rev. 2000) makes it still possible to address any band below 1 GHz with respect to possible additional allocations for the non-GSO MSS. Developments on this matter should be carefully watched.

(2) Agenda Item 1.31 – Additional MSS Allocations in the Range 1-3 GHz

This item considers additional allocations to the MSS in the range 1 – 3 GHz in accordance with Resolutions 226 and 227. Under this item it will be determined whether MetSat down-links have to share with MSS which imposes significant interference potential.

2 RESULT OF THE WMO/CBS/SG-RFC

WMO/CBS/SG-RFC was held at WMO in Geneva from 2 to 10 May 2001 with 16 participants from 13 countries and organizations including JMA. The summary of the discussion regarding MetSat and remote sensing is as follows.

2.1 MAIN AGENDA ITEMS AND PROCEEDINGS

2.2.1 Review of 400 MHz and 1670 MHz bands after WRC-2000

(1) 1670 MHz band

USA studied improving the ITU Rec. SA. 1264 [Sharing between MetSat/MetAids and MSS (Earth to space) in 1675-1710 MHz band] which was revised by WP7C, in accordance with WP8D request, and proposed WP8D that 5 MHz bandwidths of 1670-1675 MHz band would be

approved the allocation to MSS in substance because it seems that MSS operation in 1670-1765 MHz band has not great influence in MetSat and MetAids.

USA, Australia and EUMETSAT input the technical documents on the assessment of the coordination distances that should be kept implementing co-frequency sharing without interference between MetSat and MSS, if 1683-1690 MHz band would be allocated to MSS. It is shown in the document that coordination distances for MSS/MetSat sharing would be in the order of 200 to 500 km.

JMA input the document regarding the number and location of S-VISSR receiving stations (see Attachment) and expressed that the number of S-VISSR station trends to rise every year.

(2) Frequency band for the remote sensing

France made a presentation on the frequency band for remote sensing in highlight with the vapor and dry air absorption band, and proposed that it would be necessary for SG-RFC to study on the possibility and the requirement for the sharing between EESS and other services regarding 10.6-10.68 GHz and 31.5-31.8 GHz bands for the remote sensing.

2.1.2 PREPARATION FOR WRC-2003 (especially, contributions for ITU-R WP7C)

Regarding study of ITU Rec. 227 that was requested to WMO, SD-RFC revised the document for the assessment of the frequency band for meteorological services in 1670-1690 MHz band, considering frequency requirement and future plan for MetAids and MetSat (Earth to space). The revised document will be input to ITU-R WP7C by WMO.

3 DEVELOPMENT OF ITU-R

3.1 WP7C

ITU-R WP7C was held from 9 to 18 May 2001. The Preliminary draft Revision of Recommendation ITU-R Rec. SA. 1158 (7C/TEMP/19) was prepared on the basis of the USA contribution (7C/88) [Interference from MSS uplinks in the band 1670-1675 MHz to MetSat downlinks above 1675 MHz and preliminary draft revision of Recommendation ITU-R SA. 1158], WMO/EUMETSAT contribution (7C/96) [Proposal for modifications to ITU-R Rec. SA.1158 in line with study results obtained for work under Resolution 227] and WMO contribution (7C/99) [Preliminary draft Revision of Recommendation ITU-R SA. 1158], and the document (7C/TEMP/21) containing proposals for liaison statement to 8D was prepared

3.2 WP8D

ITU-R WP8D was held from 21 May to 01 June 2001. WP8D discussed in detailed on the text revision of the Rec. ITU-R SA. 1158 (7C/TEMP/19) which was sent from WP7C, and resent WP8D comments regarding the text revision of the SA.1158 to WP7C.

Regarding the preliminary draft CPM for the preliminary agenda 1.31 for WRC-2003, the heated discussion lasted at WP8D.

4 JMA ACTIVITIES FOR FREQUENCY MATTERS

4.1 INTERNATIONAL RELATED ACTIVITIES

(1) Cooperation with Australia

The Australian Bureau of Meteorology (BoM) prepared, the document content assessment

of the feasibility of implementing co-frequency sharing between MSS (Earth to space) and MetSat by determining required coordination distances between GMS earth stations, such as those operated in Australia by BoM and MSS earth stations to Space Frequency Coordination Group, which was held in Australia on November 2001. This document was prepared on the basis of the information provided by JMA content the necessary GMS-5 parameters and characteristics and after the technical discussion between BoM and JMA.

(2) Cooperation with NOAA

JMA received information about the new proposal provided by NOAA, in which it would approve that 1670-1675 MHz band could be allocated to MSS instead of 1683-1690 MHz band, in respect of the sharing between MetSat (GVAR and S-VISSR receiving station) and MSS. JMA responded that JMA agreed to study the allocation of 1670-1675 MHz band to MSS. Regarding the preliminary agenda 1.31, it is very importance for GOES and GMS/MTSAT, which use the same frequency for GVAR and S-VISSR stations, to exchange information closely.

4.2 DOMESTIC RELATED ACTIVITIES

(1) Appeal to the Japanese Administration

JMA has been continuing to appeal the protection of the frequency band for meteorological activities, in respect of the sharing between MSS and MetSat service in the band 1670-1710 MHz, to the Ministry of Public Management, Home Affairs, Posts and Telecommunications, which is the Telecommunications Administration of Japan.

(2) Cooperation with NASDA

In respect of the Earth Exploration Satellite Service (EESS), JMA has been continuing our activities for the protection and the obtainment of necessary frequency bands for EESS in inter-cooperation with NASDA.

5 CGMS-XXVIII ACTIONS

The followings are JMA responses to CGMS-XXVIII ACTION regarding frequency matters.

5.1 ACTION 28.15

CGMS Members, through their national representatives, shall provide to ITU (ITU-R WP7C) all relevant information on the current status and future plans of GVAR and S-VISSR stations.

JMA provided the list of S-VISSR stations in the GMS coverage (see Attachment) not only to WMO/CBS/SG-RFC but also to the Ministry of Public Management, Home Affairs, Posts and Telecommunications, which is the Administration of Japan and requested the Administration to input the list to ITU-R.

5.2 ACTION 28.17

Japan and USA to prepare technical inputs to the Space Frequency Co-ordination Group and ITU-R indication the revision of CGMS partition agreement and to provide technical justification for this change.

.. JMA explained the Administration of Japan the operation and frequency plans for MTSAT-1R and MTSAT-2 that will be successor to GMS series as follows:

- (1) Status of MTSAT-1R and MTSAT-2 programme is on the manufacturing step.
- (2) The frequency of 1687.1 MHz +/- 3MHz is for MTSAT-1R and MTSAT-2 HRIT as same as GMS S-VISSR.
- (3) There is a possibility that MTSAT-2 would be operated more than for 15 years.
- (4) MTSAT-1R and MTSAT-2 have a ranging system used the HRIT signal on 1687.1 MHz so that the frequency for HRIT is very important for the MTSAT operation.

In respect of the sharing between MSS and GAR/S-VISSR in 1683-1690 MHz band, JMA has often requested the Administration of Japan to input to ITU-R the Japanese proposal or related information based that it would be difficult to share between MSS and GVAR/S-VISSR.

6 PREPARATION FOR WRC-2003

6.1 METEOROLOGICAL SATELLITE SERVICE (MetSat)

JMA positively joins some domestic conferences regarding WRC-2003, which are organized by the Administration of Japan, and strongly appeals the protection of the necessary frequencies for MetSat regarding the preliminary draft agenda 1.20 and 1.31 for WRC-2003.

And JMA requests the Administration of Japan that the protection of necessary frequencies not only for MetSat but also for other meteorological services would be the common proposal by Asia Pacific Telecommunity (APT).

JMA will provide the contribution documents regarding Agenda 1.20 and 1.31 to APT and ITU through the Administration of Japan, if necessary.

JMA will make an effort to attend the next WMO/CBS/SG-RFC and ITU-R WP7C in February 2002.

6.2 EARTH EXPLORATION SATELLITE SERVICE (EESS)

JMA continues to appeal to the Administration of Japan the protection and the obtainment of necessary frequencies for the meteorological analysis using Earth Observation Satellite data, as a user. And JMA will give necessary assistance for this issue, if necessary.

6.3 SCHEDULE FOR THE ITU-R RELATED CONFERENCES FORWARD WRC-2003

The schedule for the ITU-R related conferences forward WRC-2003 is shown in the Table-JPN-WP-10.

Time	Conference and Event
2001 October November	ITU-R SG7, WP7E ITU-R TG1/7

2002	<i>February</i> February March May	<i>WMO/CBS/SG-RFC</i> ITU-R WP7B, WP7C, WP7D, JTG4-7-8 ITU-R TG6/7, TG1/7 ITU-R WP7E, JTG4-7-8-9, JTG4-7-8
2003	June	WRC-2003

WP Working Party
TG Task Group
JTG Joint Task Group
WRC World Radiocommunication Conference

Table-JPN-WP-10 Schedule for ITU-R forward WRC-2003

Attachment

Number and Location of S-VISSR Receiving Stations

as of 1 March 2001

No.	City	Country	Location	Remarks
1	Adelaide	Australia	S34. 51' E138. 35'	
2	Casuarina N.T	Australia	S12. 22' E130. 52'	* 06/2000
3	Crib Point	Australia	S38. 21' E145. 10'	
4	Frentree	Australia	S37. 53' E145. 16'	
5	Hawthon	Australia	S37. 29' E145. 00'	
6	Melbourne	Australia	S37. 29' E144. 35'	
7	St. Lucia	Australia	S27. 18' E153. 00'	
8	Sydney	Australia	S33. 53' E151. 12'	* 08/2000
9	Townsville	Australia	S19. 20' E146. 46'	
10	West Perth	Australia	S31. 57' E118. 50'	* 08/1999
11	Dacca	Bangladesh	N24. 00' E 90. 00'	
12	Dhaka	Bangladesh	N23. 46' E 90. 23'	
13	Bandar Seri Bewagan	Brunei	N04. 57' E114. 56'	
14	Cangsha	China	N28. 12' E113. 05'	
15	Cheng-chou	China	N34. 43' E113. 39'	
16	Cheng-tu	China	N31. 11' E104. 01	
17	Guangzhou	China	N23. 10' E113. 20'	
18	Kumming	China	N25. 01' E102. 41'	
19	Lan-chou	China	N36. 03' E103. 53'	
20	Nanjing	China	N32. 02' E118. 49'	
21	Beijing	China	N39. 56' E116. 19'	
22	Shanghai	China	N31. ? E121. ?	
23	Shenyang	China	N41. 26' E123. 26'	
24	Nadi	Fiji	N17. 45' E177. 27'	
25	Hong Kong	Hong Kong	N22. 18' E114. 10'	
26	Bogor	Indonesia	S06. 36' E106. 47'	
27	Jakarta	Indonesia	S06. 11' E106. 50'	
28	Chiba	Japan	N35. 37' E140. 06'	
29	Chiba	Japan	N35. 38' E140. 04'	
30	Fuchu	Japan	N35. 40' E139. 29'	
31	Kumamoto	Japan	N32. 49' E130. 52'	
32	Miyazaki	Japan	N31. 55' E131. 27'	
33	Nagoya	Japan	N35. 09' E135. 58'	
34	Narita	Japan	N35. 45' E140. 23'	* 04/1998
35	Osaka	Japan	N34. 42' E135. 34'	
36	Osaka	Japan	N34. 40' E135. 31'	
37	Sagamihara	Japan	N35. 34' E139. 22'	
38	Sakura	Japan	N35. 39' E139. 45'	* 09/1998
39	Shimonoseki	Japan	N33. 57' E130. 56'	
40	Takayama	Japan	N31. 26' E131. 01'	
41	Tokyo	Japan	N35. 32' E139. 47'	* 04/1998
42	Tokyo	Japan	N35. 40' E139. 30'	
43	Tokyo	Japan	N35. 01' E139. 45'	

Number and Location of S-VISSR Receiving Stations (continued)

No.	City	Country	Location	Remarks
44	Tokyo	Japan	N35. 41' E139. 44'	
45	Tokyo	Japan	N35. 40' E139. 50'	
46	Tokyo	Japan	N35. 40' E139. 44'	
47	Tokyo	Japan	N35. 43' E139. 43'	
48	Tokyo	Japan	N35. 41' E139. 46'	
49	Tokyo	Japan	N35. 38' E139. 46'	
50	Uji	Japan	N34. 54' E135. 48'	
51	Yokosuka	Japan	N35. 13' E139. 40'	
52	Seoul	Korea	N37. 34' E126. 58'	
53	Selangor	Malaysia	N03. 06' E101. 39'	
54	Wellington	New Zealand	S41. 17' E174. 46'	
55	Quezon City	Philippines	N14. 39' E121. 03'	
56	Singapore	Singapore	N01. 21' E103. 58'	
57	Bangkok	Thailand	N13. 07' E100. 06'	
58	Honolulu	USA	N21. 20' E?	
59	Honolulu	USA	N21. 19' E?	
<p>Number of S-VISSR Receiving Stations registered in Japan Meteorological Agency, as of 1 March 2001: 59</p> <p>Remarks: * Month and Year of starting operation after 1998 Six stations have increased in recent year.</p>				