

**Working Group for Terrestrial Digital Broadcasting Relay Stations  
(1st Meeting) Summary of Minutes**  
**Broadcasting System Committee, Telecommunications Technology Subcouncil,  
Telecommunications Council**

**1. Date and time**

Friday, October 27, 2006 16:00 -

**2. Location**

First Conference Room of MIC (Ministry of Internal Affairs and Communications)

**3. Agenda**

- (1) About this consultation
- (2) Considerations in this working group
- (3) About the draft schedule for future discussions
- (4) Others

**4. Attendees (Honorifics omitted, in random order)**

Kobayashi (Chief, Association of Radio Industries and Businesses), Ueda (Matsushita Electric Industrial Co., Ltd.), Ota (M.) (TV TOKYO Corporation), Ota (H.) (National Institute of Information and Communications Technology), Ogura (The National Association of Commercial Broadcasters in Japan), Sato (NHK Integrated Technology Inc., as deputy for member Ozaki), Saito (Hitachi kokusai Electric Inc., as deputy for member Otosaka), Kato (TV Asahi Corporation), Kawabe (Sharp Corporation), Ando (Japan Cable Television Engineering Association, as deputy for member Kawamoto), Kurihara (Miharu Communications Inc.), Sugawara (Tokyo Broadcasting system, Incorporated), Sugiura (Maspro Denkoh Corp.), Hirono (Fuji Television Network, Inc., as deputy for member Seki), Hayashi (Nippon Television Network Corporation), Higuchi (NEC Corporation), Hirose (Toshiba Corporation), Fujimaki (Sony Corporation), Magarifuchi (Japan Radio Co., Ltd.), Akisada (Japan Cable Laboratories, as deputy for member Maruyama), Moriyama (the Japan Broadcasting Corporation), and Yamamoto (Yagi Antenna Inc.)

[Secretariat] Fuseda, Fukushima, Endo, and Kikuchi (Broadcasting Technology Division, MIC)

## **5. Documents Distributed**

Document 1-1: Consultation No. 43 Report from Telecommunications Technology Subcouncil, Telecommunications Council

Document 1-2: List of Members of the Broadcasting System Committee

Document 1-3: Administration policy for the Broadcasting System Committee

Document 1-4: Administration policy for the Working Group for Terrestrial Digital Broadcasting Relay Stations

Document 1-5: About the technical conditions on the terrestrial digital broadcasting relay stations

Document 1-6: Draft schedule

## **6. Summary of the Meeting**

Following the opening addresses from the secretariat (Fuseda, Senior Technology Planning Officer, Broadcasting Technology Division) and chief Kobayashi, the committee members introduced themselves, and the agenda items were discussed as follows after ensuring that every participant received the documents to be distributed.

### **(1) About this consultation**

The secretariat explained Documents 1-1 to 1-4 whereby MIC had asked the Telecommunications Council to deliberate on Consultation No. 2023 “Technical conditions on broadcasting systems.” A Broadcasting System Committee had been established when the deliberation process was started, and this working group was set up to promote the study concerning the “technical conditions based on the size of terrestrial digital broadcasting relay stations” under the Committee.

After this explanation, chief Kobayashi appointed member Seki as a deputy chief in line with section 4-(2) in the administration policy for this working group (Document 1-4).

### **(2) Considerations of this working group**

#### **a. Proposals from chief Kobayashi**

Before confirming the considerations of this working group, chief Kobayashi made the following statements and received approval from the members.

- This working group had a mission to study “the technical conditions based on

the size of terrestrial broadcasting relay stations” and would make a report on the results to the Broadcasting System Committee toward the January report.

- Kobayashi was appointed as the head of the working group in the first meeting of the Broadcasting System Committee. Consequently, Kobayashi emphasized as head, that it was essential to carry out efficient deliberations because the working group had to study the technical conditions in a very short period of time. In order to speed up the deliberation process, Kobayashi proposed that the group should proceed with deliberations by actively bringing the results of deliberations in the ARIB (Association of Radio Industries and Businesses) Digital Broadcasting System Development Task (Working Group for Terrestrial Digital Broadcasting Low-Power Transmitting Systems) into this working group and accepting information and constructive comments provided by all the members of this group, and received approval from the members.
  - Consequently, first, I would like member Ota (TV TOKYO Corporation), a former chief of the Working Group for Terrestrial Digital Broadcasting Low-Power Transmitting Systems of the ARIB (Association of Radio Industries and Businesses) Digital Broadcasting System Development Task to explain the results of the working group. What do other members think?
- b. Explanation about the results of deliberations in the ARIB (Association of Radio Industries and Businesses) Digital Broadcasting System Development Task (Working Group for the Terrestrial Digital Broadcasting Low-Power Transmitting Systems Task)

Member Ota (TV TOKYO Corporation) explained the background of deliberations started by the ARIB (Association of Radio Industries and Businesses) Digital Broadcasting System Development Task (Working Group for the Terrestrial Digital Broadcasting Low-Power Transmitting Systems Task) and described the results of the deliberations with Document 1-5.

c. Confirmation of the considerations in this working group

After chief Kobayashi added statements to the effect that the results of deliberations described in section b. had been derived from time-consuming efforts and we did not seem to have other considerations to be added to them or should not remove anything from them, the group members accepted that the considerations in this group should be “1. Classification of stations,” “2. Tolerances for frequency departure,” “3. Tolerances for antenna power departure,” and “4. Spectral mask.”

### **(3) About the draft schedule for future discussions**

Referring to Document 1-6, the secretariat proposed a schedule for future discussions (draft) including the following items as its major considerations and received approval from the members:

- In future, the members would consider the draft report from the working group by exploring every consideration described in Document 1-5.
- In the second meeting of the working group, the members would discuss the table of contents (draft) and an interim report (draft) based on these, and would report the results to the second meeting of the Broadcasting System Committee.
- The second meeting of the Broadcasting System Committee was scheduled to invite those who “have academic backgrounds relevant to the technical conditions of terrestrial digital broadcasting relay stations” to voice their opinions. The deliberations in the meeting, including the opinions of the academic experts, would be brought into this working group and the draft committee report would be finalized after the deliberations in the third and fourth meetings of the group.
- The subsequent meetings were scheduled to be held according to the description in Document 1-6. Considering the date of the third meeting of the Broadcasting System Committee, it might be difficult to hold the fourth meeting of the working group. If that was the case, the meeting might be replaced by e-mail deliberations when the necessity arose in line with the administration policy for the working group.
- The draft committee report would undergo the deliberation process in the third meeting of the Broadcasting System Committee and be subjected to a public comment procedure in the Committee before the committee report would be finalized based on the draft in the fourth meeting.

Then, chief Kobayashi stated that as we would discuss the table of contents (draft) and the text body (draft) of the interim report to the 2nd meeting of the Broadcasting System Committee in the next meeting, we would like to think back what had been deliberated so far today and discuss what we noticed in the direction of the draft report, its wording, etc. at the current point in time. The members exchanged discussions about the following major items:

- a. Ground that proves the technical conditions to be developed will not affect reception quality such as error rates
  - Chief Kobayashi: In the questions-and-answers session in the 1st meeting of the Broadcasting System Committee, the committee concluded that it would proceed

with deliberations based on securing reception quality as one of the major presuppositions in response to an opinion voiced by a member. I would like the secretariat to report on the matter.

→ Secretariat: A member pointed out that “the recent development of the technical standard should not adversely affect, for example, error rates to secure reception quality.” As a result, the chairperson said, “It is only natural that we should consider the fact that the technical standards will not adversely affect other radio stations. In addition, we will proceed with deliberations based on securing reception quality as one of the major presuppositions.”

Consequently, needless to say, MIC thinks that this working group must declare that “the technical conditions be developed to the extent that they do not affect reception quality such as error rates” and include this point in the report to the Broadcasting System Committee.

○ Chief Kobayashi: I would like to add my own comment. Chairperson Ito has taken part in the deliberations concerning satellite systems and cable television so far. I believe that he made a comment about reception quality from his past experience. If I put his words in a straightforward way, I think he said “Undertake line design properly and accurately.” I feel that we will have achieved his true intention if we write where reception antenna for relaying broadcast waves must be installed and how line design must be conducted in terrestrial digital broadcasting based on multistage relays.

→ Member Ota (M.): The construction of relay stations is already under way. The line design in multistage relays is being conducted based on ARIB STD-B31 (transmission method for terrestrial digital broadcasting). I believe that we should state this.

○ Chief Kobayashi: I agree with you.

b. Applicable pattern and relay method for relay stations based on the scale of antenna power

○ Chief Kobayashi: Experts well understand the scale of terrestrial digital broadcasting relay stations, and locations, geographies, and so forth which apply to the relay stations. However, laymen cannot imagine them in reality or even if they can imagine them, it may not be accurate.

Further, in the questions-and-answers session of the 1st meeting of the

Broadcasting System Committee, a member asked if the regenerative relay method would be considered. Chairperson Ito answered that analog broadcasting basically adopted the non-regenerative method and we would also adopt the method this time. Will the same line of thinking apply to digital broadcasting in reality?

About the two moot points above, I would like the working group to submit answers as reference materials for the 2nd meeting of the Broadcasting System Committee.

→ Member Ota (M.): I want to clarify the definition of this term. Does the regenerative relay method mean that signals are returned to TS and modulated there again? If so, the delay time will be increased by about another 1 second. Consequently, we cannot say that regenerative relay methods are not adopted, but they are uncommon.

→ Member Higuchi: As a handbook published by Japan Electronics and Information Technology Industries Association (JEITA) includes information on the regenerative relay method, including measurement methods, we should avoid using the expression “not realistic.” I would rather decide on a statement such as “the regenerative relay method works towards improving line design, and consequently, we dare to consider it in comparison with the non-regenerative relay method, which tends to work in a negative way for line designing.”

c. About conditions under which technical standards for extremely low-power stations are applicable

○ Chief Kobayashi: According to the explanation about the results of deliberations in Association of Radio Industries and Businesses (Document 1-5), the applicable conditions of the technical standards for extremely low-power stations are the same as those for current analog broadcasting. One of the conditions is that the standards must apply to areas that are narrow and closed from the viewpoint of characteristics of radiowave propagation. What areas does this statement point to?

Won't provisions like this cause any problems?

→ Secretariat: This development of the technical standards is conducted to

efficiently streamline and prepare the digital relay stations in a short period of time and promote the smooth diffusion of terrestrial digital broadcasting, while also considering the realization of the concept of “remote area coverage” as pointed out in the 3rd interim report concerning the Optimal Utilization of Terrestrial Digital Broadcasting and so forth from the Telecommunication Council. For this reason, it may be necessary to summarize the cases for which the technical standard for extremely low-power stations can apply in order to make the interpretation of the standards as consistent as possible.

It may also be necessary to clarify where extremely low-power stations will be used. Certainly, when only analog broadcasting services were provided, MIC conducted an examination of the stations with the current provisions only. But, this policy is becoming out of step with the times. Although it will be difficult to do so, we intend to put it in statutory form.

- Chief Kobayashi: The expression “an area that is narrow and closed from the viewpoint of characteristics of radiowave propagation” reminds me of an underground mall. Since some underground malls are large, they may not necessarily be said to be narrow areas. I think we must carefully consider underground malls to which exceptional provisions should apply.

Terrestrial digital broadcasting services include one-segment services. As far as cell phones are concerned, digital services are provided in underground malls. In light of this, I believe we must think about how to deal with terrestrial broadcasting in underground malls. As I think that the Broadcasting System Committee will also inquire about the matter, I would like to include it in the report.

→ Member Ota (H.): I think that one of the conditions will be that an area must meet the standards for SFN operation. Even if an underground area is directly under a key station, can't we think that extremely low-power stations are allowed to be installed there if the area meets this condition?

→ Secretariat: We envisage that the technical conditions will apply to the mountain areas and remote areas that are to be covered. We thought areas directly under a key station fell outside of the scope of consideration.

→ Member Ota (M.): An exceptional provision sets the tolerance for frequency departure to 20 kHz, which has been calculated based on the presupposition of MFN operation.

d. About conditions under which exceptional provisions for spectral mask are applicable

○ Chief Kobayashi: What do you think of the relations between the statement (“an area that is narrow and closed from the viewpoint of characteristics of radiowave propagation”) and the provision for spectral mask? According to the explanation about the results of deliberations of the Association of Radio Industries and Businesses (Document 1-5), the values for spectral mask were considered for analog broadcasting only. I think that broadcasting will continue to exist, so we must deliberate on its technical standards in a long span of 20 to 30 years. It has been decided that the frequency band of 470 to 770 MHz will be shared with land mobile services from the year 2012. I think we must consider spectral masks with other services, including the land mobile.

→ Member Moriyama: I think considering spectral masks with other services is far beyond the scope of deliberation by this working group. In the first place, Article 56 of the Radio Law stipulates that radio stations must be operated in a way whereby they do not cause any interference, such as crosstalk, to the operation of other radio stations, etc. Considering this matter with other services should be done on an individual basis sooner or later when the specifications, etc. of other relevant services have been clarified. It seems difficult to consider it now in this working group.

○ Chief Kobayashi: If my memory is correct, I believe the results of deliberations in November, 2004 by the Spurious Committee normally established provisions not with relative values but with absolute values for low-power systems. If that is the case, a different definition method may be more appropriate than masks (relative values). Consequently, I would like to add new definition methods, including how to use the exceptional provisions in urban areas, to a list of the considerations when the necessity arises.

e. Setting values of +20% / -20% for antenna power departure tolerance

○ Chief Kobayashi: According to the explanation about the results of deliberations in Association of Radio Industries and Businesses (Document

1-5), it was concluded that it was appropriate to set the tolerances for antenna power departure for the relay stations with 0.5 W or less and more than 0.05 W in power to  $\pm 20\%$ , which means that the tolerances for the antenna power departure for the relay stations will have two specified values, in contrast with that of analog broadcasting. What does the secretariat think of the situation as the radio supervisory authority?

→ Secretariat: It may be possible to specify the tolerance with two values, one for MCPAs and another for SCPAs, if it cannot fall within the current specified value (+10%) in MCPA. However, we would like to ask the reason or reasons why the tolerance cannot be made to fall within the current specified value (+10%).

→ Member Magarifuchi: Let me answer your question in general terms. While the facilities for key stations, and large-scale or major relay stations are installed indoors (with a temperature of 0 to 40 °C), those for extremely low-power stations are installed outdoors (with a temperature of -10 to 60 °C). But, since hardware does not discern plus or minus values, different applied values seem to be right.

Following the questions-and-answers session above, chief Kobayashi requested that the members inform the secretariat (e.g. by e-mail) when they had more comments, etc. by October 31, and the table of contents (draft) and the text body of the interim report that would be discussed in the next meeting had to be compiled in line with the arguments above.

#### **(4) Others**

○ Member Magarifuchi: Section 5 in “The Administration Policy for the Terrestrial Digital Broadcasting Relay Stations” (Document 1-4) mentions the disclosure of meetings. What does this mean specifically?

→ Secretariat: As you can see from today’s meeting, it means two things: All meetings must be open to an audience, and the reference materials and results of the meetings must be put on the Internet and disclosed to the public.

The next meeting is scheduled for 16:00 on Tuesday, November 7, 2006.

End of Summary