

**Working Group for Terrestrial Digital Broadcasting Relay Stations
(2nd Meeting) Summary of Minutes
Broadcasting System Committee, Telecommunications Technology Subcouncil,
Telecommunications Council**

1. Date and time

Tuesday, November 7, 2006 16:00 -

2. Location

Fourth Special Conference Room of MIC (Ministry of Internal Affairs and Communications)

3. Agenda

- (1) Confirmation of the summary of minutes of the previous meeting
- (2) About the draft report
- (3) Others

4. Attendees (Honorifics omitted, in random order)

Kobayashi (Chief, Association of Radio Industries and Businesses), Seki (Deputy Chief, Fuji Television Network, Inc.), 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), Ozaki (NHK Integrated Technology Inc.), Saito (Hitachi Kokusai Electric Inc., as deputy for member Otosaka), Kato (TV Asahi Corporation), Kawabe (Sharp Corporation), Kawamoto (Japan Cable Laboratories), Kurihara (Miharu Communications Inc.), Sugawara (Tokyo Broadcasting System, Incorporated), Oyama (Maspro Denkoh Corp., as deputy for Sugiura), Hayashi (Nippon Television Network Corporation), Higuchi (NEC Corporation), Hirose (Toshiba Corporation), Fujimaki (Sony Corporation), Magarifuchi (Japan Radio Co., Ltd.), Maruyama (Japan Cable Laboratories), Moriyama (the Japan Broadcasting Corporation), and Yamamoto (Yagi Antenna Inc.)

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

5. Documents Distributed

Document 2-1: Working Group for Terrestrial Digital Broadcasting Relay Stations
(1st Meeting) Summary of Minutes (draft)

Document 2-2: Draft report to the Broadcasting System Committee,
Telecommunications Technology Subcouncil, Telecommunications
Council

Reference: Technical standards concerning television broadcasting

6. Summary of the Meeting

The agenda items were discussed as follows after ensuring that every participant received the documents to be distributed:

(1) Confirmation of the summary of minutes of the previous meeting

The Working Group for Terrestrial Digital Broadcasting Relay Stations (1st Meeting) Summary of Minutes (draft) was approved.

(2) About the draft report

a. Messages from the secretariat

(a) “Document 2-2: Draft report to the Broadcasting System Committee, Telecommunications Technology Subcouncil, Telecommunications Council” consists of the cover sheet, table of contents, text body, and references.

(b) The comments, etc. that were sent to the secretariat after the previous meeting was over are as follows:

- Member Ota (H.): As the draft report lacks specific explanations about economic effects, these should be clarified.
- Member Fujimaki: The correction of typographical errors
- The Working Group for Terrestrial Digital Broadcasting Low-Power Systems in Association of Radio Industries and Businesses: We also would like to explain the study on the characteristics of commercially available receivers for terrestrial digital broadcasting used when studying the systems, in connection with the results of deliberations in the group that were brought into the previous meeting.

b. Explanations about the characteristics of commercially available receivers for

terrestrial digital broadcasting

In response to one of comments in section a. (b), Member Moriyama (Deputy Chief for the Working Group for Terrestrial Digital Broadcasting Low-Power Systems, Association of Radio Industries and Businesses) explained the characteristics of commercially available receivers for terrestrial digital broadcasting in line with Reference 1 “About the characteristics of commercially available receivers for terrestrial digital broadcasting” in Document 2-2.

Chief Kobayashi asked the following question about this explanation: For the tolerances for frequency departure in SFN, the current tolerance for frequency departure is defined as 1 Hz. But, the reference states that “the characteristics of receivers will not deteriorate drastically if the tolerance is set to up to about 10 Hz.” Does this mean that the receivers are treated with some measures? It was decided that member Moriyama would answer the question later.

c. Line design examples (including the handling of regenerative relay method)

Member Ota (M.) explained the separate document “5. Line Design Examples” in Document 2-2. After the explanation, the following general questions-and-answers session was provided:

- Member Moriyama: While Section 5.3 also studies regenerative relaying, Section 5.4 ends with a conclusion to the effect that regenerative relaying will not be needed. I think such an assertive statement should be avoided at this point in time.
- Chief Kobayashi: I agree with you. The first line on page 22 “It is also believed that ..., but...” should be replaced with “It is also believed that” I think it is right to delete the part after “but.”
- Secretariat: We would like to suggest a description consisting of the following two sentences:
 - The line design example (ARIB SDT-B31) that was studied before shall basically apply as it is.
 - We still have to consider configurations in 4 stages or more, but various C/N improving measures on the side of transmitters can be thought out on line design. If we adopt them, we can obtain sufficient C/N values.
- Chief Kobayashi: I agree with the secretariat. Chairperson Ito in the Broadcasting System Committee requested us to ensure that even when we “loosen” conditions this time, it should not cause any problems to line design. For example, we are considering the tolerance of frequencies these days. I would like to prove that the relevant reference value will produce proper results.

Why don't we proceed with our deliberation process by applying the reference value that we are considering now to values in "Table 5. 1-1: Tentative Value Set when Conducting Line Design"?

- Member Moriyama: A margin as large as 9 dB is allowed for when actually installing stations. This large margin will neutralize effects from data such as the frequency and antenna power departure that are being considered now. Consequently, I believe it is better that we should think line designing can be covered only within this margin.
- Chief Kobayashi: As I see some members agree on Moriyama's comment, I would like to rewrite the section after I consult with member Ota and the secretariat.

d. Configurations of key stations and relay stations in terrestrial digital broadcasting

Member Moriyama explained Reference 2 "About Configurations of Key Stations and Relay Stations in Terrestrial Digital Broadcasting" in Document 2-2. After the explanation, the following general questions-and-answers session was provided:

- Member Kawamoto: I would like to add "Cable TV, etc." as an additional item to the three items in the feature, etc. column of "Remote Area Coverage Stations" because signals may travel through cable television networks.
 - Deputy Chief Seki: What is the difference between "mini-satellite stations" and "remote area coverage stations"
- Secretariat and Deputy Chief Seki: Speaking of the two types, they differ in licensees and values in transmission antenna power.
- Chief Kobayashi and Deputy Chief Seki: Is it right to classify "underground malls, etc." into "0.05 W or less"?
- Member Ozaki: When we think about using low-power systems in underground malls, we may adopt two methods: (1) High power transmission from one location and (2) Low power transmission from many locations. Method (2) is more advantageous than method (1) because the latter may leak the radio spectrum to the outside of the shielded space and we want to cover the neighborhood, etc. of the entrance steps of an underground mall when we think of cell reception.

Note that methods (1) and (2) are not very different in terms of cost. Consequently, it will be better to select method (2). But, there seems to be room

to give a little more consideration to this matter.

- Chief Kobayashi: Let us think a little more about the expression “0.05 W or less.”

e. Conditions under which technical standards for extremely low-power stations are applicable

In the wake of deliberations explained in section d. that made the members clearly envisage the configurations of key stations and relay stations in terrestrial digital broadcasting, chief Kobayashi made a statement to the effect that he wished to summarize the opinions of this working group on conditions under which technical standards for extremely low-power stations are applicable.

- Secretariat: MIC wishes that the statement “an area that is narrow and closed from the viewpoint of characteristics of radiowave propagation” should apply to the mini-satellite stations, remote area coverage stations, underground malls, etc. and should not apply to poor signal preventive stations (in the shadow of buildings, etc. and poor reception areas).
- Member Ota (H.): Now, NICT is studying relay devices or gap fillers that are contingent on the use in the shadow of a building or within doors. It is extremely difficult to clear a condition that they must not affect any existing services. That is, it is impossible to clearly turn off a transmission electric field outside of the targeted broadcasting area. NICT is currently struggling with what to do about protecting existing viewers in this case.

In light of this, I think it difficult to include gap fillers in relay networks for broadcasting stations at this point in time (note that this remark is for SFN operation).

- Secretariat: On the other hand, we have a problem of whether or not necessary frequencies can be secured in the case of MFN operation.
- Member Sugawara: What does “the mountain areas, etc.” (on page 10) mean among the applicable conditions?
- Member Ota (M.): The candidates for so called “remote area coverage” include many parts surrounding urban areas. This fact makes me believe we must consider whether “the mountain areas, etc.” can include some of these parts.
- Deputy Chief Seki: There are many requests for installing poor signal preventive stations (for poor reception). I wonder whether it is good to categorically exclude them from the scope of the statement.

- Secretariat: MIC understands that we have received such requests. But, in fact, both the SFN and MFN operations have problems. Under these circumstances, MIC is compelled to develop and document the technical standards we are working on now. For this reason, some items will be excluded from the scope of the statement on a temporary basis, but that does not mean that MIC will not consider them at all.
 - Chief Kobayashi: I would like to summarize discussions so far. It is still possible to install extremely low-power stations to locations where many requests for the stations voiced above by applying other standards to them than the exceptional provisions to extremely low-power stations. As far as poor signal preventive stations (in the shadow of buildings, etc. and poor reception areas) are concerned, I think it is one measure to conclude they should be excluded from the scope of areas to which the reference value we are considering will apply by deciding that “MIC will continue to deliberate on poor signal preventive stations as ‘one of the future considerations’ because MIC still have some problems to resolve with them.”
 - Chief Kobayashi: The wording on page 10 is not clear enough to describe the areas to which the technical standards apply. No member seems to understand what it means unless an actual wording written in or directly before the relevant provisions or regulations is included.
 - Member Moriyama: I am afraid that we have a tight schedule and should proceed with this task only paying attention to streamlining words and expressions, and consequently every member will understand it differently when thinking it back at a final stage. I would like every member to remember that we must proceed with our job as we reach a consensus of the working group about our deliberations.
 - Chief Kobayashi: I agree with you. I don't think it right to leave work to the secretariat. I would like to proceed with our work as I create a consensus among all the members through e-mail deliberations in line with the administration policy for this working group.
- f. Clarification of economic effects

Member Ota (H.) made a statement to the effect that as “the development of the technical conditions that are also excellent for the economics of relay stations” is declared as one of the reasons for this consultation, our report must include

statements that mention economic effects.

Chief Kobayashi agreed with Ota (H.) and the members discussed the scope and content of what can be included in the report by considering the deliberation time. It was concluded that the working group should include the following 2 economic effects: (1) those derived from being able to use crystal oscillators, and (2) those derived from adopting MCPA.

g. Setting new values of +20% / -20% for antennal power departure tolerance

The secretariat explained that they described the reason why new tolerance values should be specified as different from a specified value of +10% for analog broadcasting in the following statements: (1) The use of MCPA would be better promoted than in analog broadcasting; (2) MCPA was more useful in low-power relay stations than those in large-power stations; (3) MCPA was likely to fluctuate towards +20% or -20% because AGC cannot be applied to it; and consequently (4) MIC had to set up new values of +20% and -20%.

In conjunction with this explanation, the secretariat also requested the members in this group to submit data that would back up this flow of description.

In response to this request, chief Kobayashi said that the reason why new tolerance values of +20% and -20% must be set up was not cogent and it was indispensable to back up the argument with data, otherwise the group would be compelled not to propose that values of +20% and -20% would be newly set up. It was determined that in this meeting, the deliberation on the matter be suspended, while the group would continue to give consideration to it.

Following the questions-and-answers session above, chief Kobayashi requested that the members inform the secretariat if they had more comments etc. by Thursday, November 9, through appropriate means such as e-mail, and the working group would compile the draft interim report that would be submitted to the 2nd meeting of the Broadcasting System Committee, based on those comments and what was discussed today.

(3) Others

The secretariat explained the future work schedule as follows:

- The flow of work until the 2nd meeting of the Broadcasting System Committee
 - Submission of more comments etc. - By Thursday, November 9
 - Modification of draft report - Must be finished by Monday, November 13
 - Requesting the group members to inquire into the modified draft report - On

Tuesday, November 14 (deadline is Wednesday, November 15)

- The 2nd meeting of the Broadcasting System Committee - Friday, November 17

- The 3rd meeting of the working group
Friday, November 24 from 14:00

End of Summary