

**Panel on Multimedia Broadcasting Services for Mobile Terminal—3rd Meeting**  
**Summary of Minutes**

1. Date and Time

Monday, October 29, 2007; 17:00–19:00

2. Location

MIC Special Conference Room 1, 8th floor, 2nd Bldg. of the Central Common Government Office

3. Attendees

(1) Members (Japanese alphabetical order; honorifics omitted)

Susumu Ito, Yumi Ogose, Shun'ichi Kita, Kazumi Kurokawa (Assistant Chair), Hiroshi Suzuki, Akira Negishi (Chair), Takashi Yamamoto, Nozomu Yoshida

(2) MIC Representatives

Ogasawara (Director-General, Information and Communications Policy Bureau), Kawachi (Deputy Director-General, Information and Communications Policy Bureau), Imabayashi (Director, General Affairs Division), Yoshida (Director, Broadcasting Policy Division), Oku (Director, Broadcasting Technology Division), Yoshida (Director, Terrestrial Broadcasting Division), Takeda (Director, Satellite and International Broadcasting Division), Fujishima (Director, Regional Broadcasting Division), Nagashio (Senior Planning Officer, Broadcasting Policy Division)

4. Agenda

(1) Presentations (Second Group)

- Digital Broadcasting Committee
- Multimedia Broadcasting Planning LLC (a joint venture)

(2) Overseas Trends

(3) Demonstration

(4) Others

5. Meeting Summary

(1) Presentations (Second Group)

The Digital Broadcasting Committee and the Multimedia Broadcasting Planning LLC each

gave a presentation on the study items and their corresponding views, which was followed by a question and answer session and an exchange of opinions.

1) Digital Broadcasting Committee:

- Presentation  
Refer to the Handout 1.
- Q&A, Exchange of Opinions

Member: I'd like to know two things. First, how many terminals have actually already been shipped, and second, what prices they are being sold at, approximately?

Digital Broadcasting Committee: We don't have the exact number of terminals shipped at the moment. According to data we have received from the United States, the module embedded in the terminal was initially priced at 125 U.S. dollars in 2004. This price dropped to 50 to 60 dollars in 2005, then to 35 to 50 dollars in 2006, and now 25 to 35 dollars in 2007. Predictions are that it will drop further to 25 dollars, or even to 15 dollars. With such devices, it seems the more they sell, the cheaper they become.

Note: In the actual discussion, the price quoted originally referred to the terminal itself. However, the representative of the Digital Broadcasting Committee later pointed out that the price referred to the module embedded in the terminal, and these minutes incorporate this correction accordingly.

Member: If we are to use a frequency band up to the low-channel range of VHF as you anticipate, how many stations will be able to be accommodated as broadcasting stations per geographical area?

Digital Broadcasting Committee: Since the frequency bandwidth used per station is about 400 KHz, we expect that, with 6 MHz, about 13 stations could be accommodated.

Digital radio, which the Digital Radio Promotion Association is currently experimenting with for practical use, employs a carrier bandwidth of 6 MHz and accommodates about 13 stations. Their bandwidth per station is about 400 KHz, and therefore we expect the same number, around 13 stations. It should be noted that we will not be able to accommodate as many as 13 if the stations are close to each other; however, we still expect to support near that number.

Member: I hear that the digital broadcasting portion will use OFDM. How specifically do you expect to use it? More specifically, how will it be broken down, and how will its use by each part (analog and digital) proceed, including in the case of simultaneous broadcasting?

Digital Broadcasting Committee: We expect to broadcast analog broadcasting programs in the digital frequency band, which is adjacent to the analog frequency band. We call this a “hybrid” arrangement. At least, this is what we are considering at the moment.

Member: Does that mean that you will be conducting simultaneous broadcasting?

Digital Broadcasting Committee: Yes, we expect to go with simultaneous broadcasting.

Member: You mentioned in the presentation that as subscribers buy new receivers, will be able to gradually migrate to digital broadcasting. However, as far as simultaneous broadcasting is concerned, I think it is possible to do the same thing without IBOC (in-band on-channel), if you are given a separate frequency band for digital broadcasting. What would be the advantage of having a frequency band close to that for analog broadcasting?

Digital Broadcasting Committee: If we are to use a separate frequency band, it would almost be the same as building a totally new broadcasting station. Then the cost would obviously be higher than with the hybrid system.

In addition, since there would be separate channels, it would pose a problem for the receiver. You would therefore need a separate receiver.

With the hybrid system, you will probably get a receiver that supports both analog and digital broadcasting. In fact, we hear that such receivers are currently being sold in the United States.

It is possible at the beginning of the transition period that you may be able to listen to programs in digital where analog waves cannot be received, and vice versa. This can also be considered as one of the advantages of the system, because it will be easier to listen to both types of program on the same receiver. That will make the migration from analog to digital easier.

Member: Today, there are unlikely to be any new entries into the business of radio broadcasting; the challenges would be too formidable. However, even in such a tough business environment, if we were to bring in multiple channels thanks to digitalization, it would encourage new entrants into the new types of business made possible by this system.

When I say, there won't be any more new entries, I guess there won't be anybody who wishes to start business from scratch. If we took a medium-to-long term view, however, I guess we could consider different groups of people, that is, those who already have equipment and those wishing to start from scratch. What I'm getting at is, from the supplier's point of view, I wonder if starting from scratch may turn out to be more advantageous in terms of competitiveness, although at the same time I understand that the resultant high costs would be bad for consumers in terms of the financial burdens placed on them. So in that regard, what do you think of the possibilities of offering something new through the new broadcasting system?

As I see it, today's discussion seems to be oriented toward existing radio broadcasters. The focus seems to be on what would be the best approach for them when they switch to digital. High quality, expansion of business scope... these both sound good for existing operators. On the other hand, what is your opinion on whether or not the market is actually going to move in that direction?

Digital Broadcasting Committee: What I'm going to say now is just my guess. When we started digital broadcasting in new frequency bands, it cost a considerable sum of money to digitalize TV. TV stations were able to do this as they were fairly rich. Now most radio stations operate on an annual income of about 1 billion yen or less. Therefore, even an investment of 100 to 200 million yen would be too much for them. If they had to support simultaneous broadcasting on top of that, migration would become impossible.

As I said earlier, it would be better to think of ways to digitalize today's content, the quality of which is not so bad. If you argue that we should discard it, well, that's another story. However, if we are to keep today's content, this system would cost less. It would also be better in terms of convenience, in that if we are allowed to use a slightly wider range of wavelengths, both we and the users will be able to continue to use current equipment using current frequency bands.

As for the features of the new services, first, the sound will definitely be of CD quality. Second, although this again is a kind of speculation, with the support for so-called "surround broadcasting," a large number of devices will be installed in automobiles, due to the ability to produce very high-quality sound from several directions. So, if devices can be produced at low cost, I believe it would definitely be possible to start a business with average capacity and average management skills.

If you wish to build a new station to deliver new services, an additional cost would be incurred for the analog part on top of the current facility, but this would be equivalent to what we had to invest when we built a new station. Naturally, it costs money if you are

trying to build something new. So I would not call this an advantage as such. To build something new, you must invest some money up front. So, I would say, there is no difference.

Member: Now you said that OFDM offers CD-class sound quality because it is digital and also because it supports surround broadcasting. Well, people are saying that FM also delivers high sound quality. So I wonder if this difference really amounts to such large added value. On another note, in the digital world there are several key issues to consider, such as bit rate and reliability. What bit rates would OFDM's LSB and USB support?

Digital Broadcasting Committee: If we make it totally digital, for example, we will be able to transmit at about 256 kbps, which means about 3 channels of CD-quality sound.

Member: By "totally," do you mean using the entire digital frequency band of 400 KHz on both sides?

Digital Broadcasting Committee: Yes, when the entire frequency band of 400 KHz becomes available in the future.

In the United States, there seem to be two channels used in actual service today.

They also operate multi-channel broadcasting by lowering the bit-rate to the level of the sound quality of AM broadcasting. A news-only station would be one example.

Member: With simultaneous, mixed transmission of analog and digital waves, the analog part is significantly impacted unless you completely shut off the digital waves using a good filter. Wouldn't existing receivers be impacted?

Digital Broadcasting Committee: As you have rightly pointed out, today in the United States, the analog part receives slight noise, or so I hear. However, I also hear that the manufacturers are working on improving the filter, which they hope will solve the problem in the near future.

Member: I guess that means that, after all, you will have to buy a new receiver, correct?

Digital Broadcasting Committee: Well, I cannot tell exactly how loud the noise is, since I have not heard it myself, but I guess it's at a level that only people with acute hearing can detect. Anyway, when I went to NAB in the United States, it did not bother me very much.

Member: While we would like to expect a lot from the fusion of telecommunications and broadcasting, have you actually seen or heard of anything in this direction in commercial services or experiments in the United States, for example, an experiment in fusion with mobile phones or installation onto mobile phone terminals?

Digital Broadcasting Committee: We have not heard of installation onto mobile phone terminals in the United States. As for fusion between telecommunications and broadcasting, there is a service in conjunction with iPod, such that you can buy a song by pressing a button on HD (Hybrid Digital) Radio. This may be called a form of fusion between telecommunications and broadcasting.

Another service allows you to obtain traffic and weather information on demand, although I don't know whether you can label that a fusion between telecommunications and broadcasting. At any rate, when we make things digital, a lot of other, similar services are bound to become a reality. So overall, I say we have started seeing a range of services along these lines.

Member: How large a difference in cost would you reckon there would be between the following two cases: when an analog radio broadcasting station installs digital equipment as an additional investment and when an entirely new company enters this digital broadcasting business?

Digital Broadcasting Committee: That would depend on the station. I hear that, when we started up our analog station, it cost us at least one billion yen. To make it a multi-station, that is, to make it digital, would cost more than 15 million yen, which is roughly the amount paid by a very small station in the United States. I cannot quote the upper limit, but I don't think it would be all that expensive. One thing, however, is that it would cost basically hundreds of million yen to construct an analog radio station under the same conditions.

This, again, applies to a large station. If we were to build an American-style station, which would be equivalent to a community broadcasting station in Japan, I think it would cost somewhat less, for example, around 200 million yen.

## 2) Multimedia Broadcasting Planning LLC:

- Presentation  
Refer to Handout 2.
- Q&A, Exchange of Opinions

Member: There are two points I'd like to make. First, you mentioned Pushcast, which was tried out by Skyperfect and Nintendo in the past, although neither was successful. You consider it mainstream, but frankly, I doubt if it would succeed in business. What do you think regarding this point?

Multimedia Broadcasting Planning LLC: We think it depends very much on the receiver. Since Pushcast allows you to view what you have accumulated in your mobile terminal at any time, and everybody uses a mobile terminal every day, we think it will maximize convenience and therefore be very effective.

The emphasis in our proposal is on this download and Pushcast, since we don't think the conventional stream-based broadcasting alone will result in effective use of the frequency band.

Member: The second point refers to the coordination between hardware and software, as mentioned on page 18, where the coordination between hardware and platform functions is discussed. I understand that since software covers a variety of consumer channels, it would be extremely difficult to maintain coordination with software in a very diverse form of business.

So, I take your words here to mean that a vertical unification between hardware and platforms would be desirable, is that correct?

Multimedia Broadcasting Planning LLC: Let me explain our thoughts. In order to ensure effective marketing overall, with regard to not only the infrastructure and the platform but also content, it would be better in terms of the promotion and growth of business for a single business operator to select channel providers and to produce, acquire or procure content to download.

Member: But when you say, "software is purchasable," you mean that software will involve the use of a separate business operator, don't you?

Multimedia Broadcasting Planning LLC: We presume in most cases the business operator will procure content from outside, although some may build their own broadcasting channels and produce their own content.

Member: Will such a business operator team up with more than one mobile phone operator or, with just one particular mobile phone company? I mean, since each mobile phone company

can already handle charging processing and can also access content, it has the capabilities of a platform operator. So, might it not be better for a mobile phone company to run this business by itself? In other words, carrier-free?

Multimedia Broadcasting Planning LLC: Yes, we presuppose carrier-free business. We would like to team up with carrier companies and make proper arrangements for collecting fees.

Member: You mentioned that you would like to have sole use of a whole frequency band of 14.5 MHz. Now, how many segments would you transmit in total at the same time?

Multimedia Broadcasting Planning LLC: That depends very much on advances in technology. On the other hand, unless we bundle a number of segments in transmission, we won't be able to build an efficient transmission infrastructure. Technology-wise, within a frequency band of 14.5 MHz, terrestrial broadcasting today uses 13 segments, but we think it possible to transmit about one-and-a-half times as many segments.

Anyway, all this depends on several parameters such as the transmission power and what kinds of antennas can be installed, so, we'll have to consider individual circumstances.

Member: You said that you would like to cover the entire area of Japan. Would you be able to do it with just one frequency? In other words, would you be able to configure an SFN (single-frequency network)?

Multimedia Broadcasting Planning LLC: Basically, we presuppose an SFN to cover the entire country. One of the differences from terrestrial digital broadcasting, in which receivers are fixed in location, is that SFN is intended for mobile receivers only. So we might as well attempt nation-wide coverage on a best effort basis. It will be possible to adjust delays to an optimum level, area by area. So we are also studying how to cover the entire area of Japan.

Member: On page 6, under "What is multimedia broadcasting?" I see as many as 53% desire to "record and stockpile programs." I think you explained the reason quite well. On the other hand, "coordination with appliances (HDD recorders)," which is at the very bottom of the list, scores very little. Given that the HDD recorder is meant for recording and stockpiling, how do you explain this gap? According to your analysis, what is the users' perception of multimedia?

Earlier in this meeting, somebody mentioned that push-type technology has not been successful. While I understand to some degree why you wish to have it, I don't see much of a

demand for it when I look at these figures. So, may I ask what you think you should deliver to users?

Multimedia Broadcasting Planning LLC: “Coordination with appliances (HDD recorders),” which is at the very bottom of the list, probably refers to the use of an SD card, that is, you first insert an SD card into the HDD to record programs, and then you take it out and insert it into the terminal to view them. So, I guess the low rating is due to the inconvenience of operation. On the other hand, recording and stockpiling programs means that you can receive and record programs in one-segment mode on the mobile phone, and then view them later at any time, for example, on the way to the office. There is a big difference here in convenience. Frankly, we ourselves were surprised to learn from this survey that there is such a big demand for recording and stockpiling.

Then comes the question of what kind of content. For example, just a few hours ago, the Boston Red Socks won a game. Suppose Matsuzaka had pitched and there had been an exciting moment, such as the clinching of the championship. Ordinarily, you would not be able to view it until the time came for a news show. However, if you could download and save the program in the meantime, you could view it any time you wished. Therefore, by keeping our eyes wide open and carefully searching for our user needs, we can cultivate the market, for example, by procuring a variety of attractive content, arranging it and delivering it. We see potential not only for images but also coupons, e-tickets, and the like.

While it appears possible to also realize this with telecommunications, we see the great advantage of simultaneous multicasting transmission, which makes it possible to reach large numbers of people at the same time. With this, we believe we can also open up a new market and expand the role of broadcasting.

## (2) Overseas Trends

- Explanation

The Secretariat presented overseas trends using “Overseas Trends in Multimedia Broadcasting Services for Mobile Terminals” (Handout 3).

## (3) Demonstration

A demonstration on “Multimedia Broadcasting Services for Mobile Terminals” was made.