



ASSOCIATION OF RADIO INDUSTRIES AND BUSINESSES

Nittochi Bldg., 1-4-1 Kasumigaseki, Chiyoda-ku, Tokyo 100-0013, Japan
Tel.: +81-3-5510-8590 Fax: +81-3-3592-1103

Santiago, April, 20th , 2007

Mr. René Cortázar
Ministro de Transporte y Telecomunicaciones
República de Chile

Subject: Summary of features of ISDB-T

Dear Minister,

The Digital Broadcasting Experts Group (DiBEG) was founded in ARIB (ASSOCIATION OF RADIO INDUSTRIES AND BUSINESSES) to promote ISDB-T, the Japanese Digital Terrestrial Broadcasting System, in the world.

ARIB is a legal entity of Japan established under the authority of the Ministry of Internal Affairs and Communications, to define, refine and maintain technical standards related to radio technologies based on the consensus among all concerned in government, academics, broadcast and telecommunication companies and manufacturers.

ISDB-T, now on service in Japan, has following features and priority. In addition, ISDB-T was developed to adopt to Japanese topography where many mountains like the topography of Chile. Therefore, ISDB-T is the best system as Chilean digital terrestrial broadcasting system

1. "BAND-SEGMENTATED" TECHNOLOGY

ISDB-T offers unique operation flexibility by use of BST-OFDM technique, which splits the 6 MHz band into 13 segments flexibly arranged into layers with independent transmission parameters. This allows delivery of any services like HDTV, multi channel SDTV, Data Broadcasting and transmission to mobile and portable receivers within 6 MHz channel.

One unique characteristic of ISDB-T's segmented transmission is the use of just 1 out of the 13 segments for broadcasting to portable receivers like cellular phones, PDAs and Notebook PCs, while transmitting to fixed receivers in HDTV

and/or SDTV using 12 remaining segments. This broadcasting service for portable receivers, named "One Seg Service", has started on April last year, and more than 5 million receivers has been sold by end of February this year.

In addition, mobile reception service is also possible by making use of ISDB-T's unique technology and several 100 thousand mobile receivers has been sold.

We hope you to see ISDB-T demo held in Japanese embassy, and confirm the priority of ISDB-T system described above.

2. SYSTEM ROBUSTNESS

ISDB-T uses a unique "time interleaving tool", which gives the system extra robustness to receive broadcasting.

This feature allows clear reception even under unfavorable conditions such as:

- (a) Indoor reception with internal antenna;
- (b) Mobile and portable reception;
- (c) Metropolitan areas with multi-path signal by reflection at the buildings;
- (d) Impulse noise from electronic devices and vehicles.

This superior performance has been demonstrated during ISDB-T demonstration in Santiago.

3. TECHNICAL COOPERATION

We confirm our agreement to the participation of Chilean members at ARIB Group managing ISDB-T.

We also confirm to facilitate direct communication between experts from both Chilean and Japanese side to intensify cooperation on digital TV technology development.

4. ROYALTIES

We hereby reinforce our commitment to exempt payments for industrial property rights regarding the patents of ISDB-T transmission technology for production of TV receivers in Chile.

We believe this option to be the most effective contribution because it allows direct transfer of the benefit to a lower consumer price, a key requirement of the Chilean Government.

As in the case of any other digital TV standard, royalties over technologies like MPEG-2 for video coding and AAC for audio coding, for example, are not under ISDB-T standard control and any sort of agreements on patent payment must be

made directly with the patent holders.

5. PRICE OF SET TOP BOX

We estimate that the price of set-top box with same functions and features will be very close regardless of broadcasting standards.

The demodulation chip is the only different component for each of broadcasting standard. It represents less than 10% of material cost, and all other components are of common use.

The cost of ISDB-T's demodulation chip is slightly higher due to its technical contents and features (e.g. robustness).

We believe this slight difference will be more than compensated by the exemption of royalty fee and above mentioned technical features.

Referentially, we attached the list of market price in Japan.

6. AVAILABILITY AND ACCESS TO THE COMPONENTS

We confirm that more than 10 suppliers are already manufacturing and supplying specific components for the ISDB-T receivers in the market, and these will be available for receiver manufacturers of another countries

We believe this diversity of suppliers will give flexibility for both Japanese and another country manufacturers for choosing suppliers and purchase under competitive prices.

Other components required are common regardless of the broadcasting standards and available in the international market at major component manufacturers.

7. MARKET FOR ISDB-T RECEIVER

Japan has 100 million TV receivers for 6MHz band (same as Chile), which shall be ready for digital terrestrial transmission when analog service will be shut-off by 2011. Over 80 million receivers are required in coming 4 years, and significant portion of them shall be low cost set-top box

In addition, Brazil will start digital terrestrial broadcast service, family of ISDB-T, in end of this year. According to Mr.Helio Costa, Minister of Communications in Brazil, initial cost of in Brazil would be from US 35\$ to US50\$. Therefore, the market for ISDB-T's STB will be extended extremely in near future.

8. PORTABLE RECEPTION

We will explain and summarize the key points for “One Seg service” below.

Cellular phone with “One Seg” receiver provides two totally independent features:

- (a) Receive “free-of-charge” broadcasting content provided by “One-Seg Service”;
- (b) Work as regular cellular phone, through a mobile operator.

The TV receiver function is optional feature of the cellular phone, same as other features other than communication capabilities, such as camera and MP3 player. This “One-Seg Service” has started on April, 2006.

We hope we could review all of the main topics and made them clear. We are confident that presented an adequate technical option for Chilean environment (robustness and flexibility), together with a strong support package in technical cooperation, trade opportunity and finance area, in line with the Chilean Government requirements.

Anyway, we will be available at any time for any further clarification you may need in your decision process. Local member of our delegation below are also available for clarifying these topics.

Mr. Eiji Roppongi – DiBEG Consultant

With kind regards,



Yasuo Takahashi

Chairperson,

DiBEG – Digital Broadcasting Experts Group

ARIB – Association of Radio Industries and Businesses