ISDB-T seminar(18th March, 2009)

Presentation 1



Advantages of ISDB-T

18th March, 2009 KBP ISDB-T Seminar Manila, Philippines **Hideo FUSEDA** Ministry of Internal Affairs and Communications, JAPAN





- Features of Japanese digital TV standard ,ISDB-T
 - Technical
 - Economical
 - Commercial
- Price of ISDB-T equipments
- Implementation of ISDB-T in Brazil



HDTV

Multi-Channel Service

Interactive TV











High quality image and sound service

Realization of multi-SDTV program service on 1ch bandwidth (6MHz)

Communication linked services with TV

Data Broadcasting



Simple retrieval of program and information at any time





ISDB-T Receiver Shipments

Almost 100 millions receivers have been shipped



Scale Economy -receivers in the world-

ISDB-T presents the faster penetration with a higher growth rate compared to other Standards.



Receivers DTT (Millinons)

Scale Economy -in 6MHz-

DVB-T has very little shipment in 6MHz. **ATSC** does not standardize the mobility

Receivers DTT in 6MHz (Millinons)



Official statistics: "DVB Worldwide" and JEITA



Comparison of Three DTTV System

System	Japan/Brazil	EU	U.S.
Features	(ISDB-T)	(DVB-T)	(ATSC)
Service start time	2003	1998	1998
Transmission system	6MHz bandwidth For mobile reception Frequency For fixed reception	← 7 or 8MCHz → bandwidth	6MHz bandwidth
	<u>Multi-carrier</u> +	<u>Multi-carrier</u>	Single carrier
	Time interleave		based on analog TV
	Band segmentation		
HDTV reception while moving	Excellent ★★★	NOT available (only SDTV) —	NOT available —
Emergency Warning Broadcasting System (Fix reception)	In service ★★★	NOT in service —	NOT in service —

Comparison of Three DTTB Systems

System	Japan/Brazil	EU	U.S.
Features	(ISDB-T)(2003)	(DVB-T)(1998)	(ATSC)(1998)
Multi-channel SDTV service	excellent (more cannels) ★★★	available ★	available ★
Mobile and Fixed Broadcasting within one transmitter	Available in One channel and One transmitter (<u>economical</u>) ★★★	NOT available in One channel and transmitter	NOT available in One channel and Transmitter
Numbers of receiver (Million) (6MHz Bandwidth) (Dec.2008)	97.9 Million	81.0 Million (in 6MHz Bandwidth) ONLY 2.2 Million	79.1 Million

Comparison Tests with Impulse Noise in Peru



ISDB-T Image is Clear

ISDB-T withstands impulse noise!



DVB-T (European Standard)

Image is not clear with noise noise

Time Interleave Technology



Comparison Test in Chile

In the case of ISDB-T, the ratio of the points having value of "5 (Excellent Performance)" within 12 km of the transmitter is more than 70%, but the other two systems do not have this ratio of 70% even within 3km of the transmitter.

This fact shows that ISDB-T is definitely superior to the other two systems as a terrestrial digital broadcasting system.



In case of ISDB-T, the number of viewers which can receive digital TV with indoor antenna is increased more than 20% by comparison with other digital TV systems.

In case of ISDB-T, more people can receive digital TV with indoor antenna (US\$ 8) by comparison with DVB-T.

However in case of DVB-T, they must buy outdoor antenna (US\$ 48). (ex. More 1.8million people need outdoor antenna in Manila*).



(Result of the comparison test between 3 digital TV systems)

 * Assuming that the rate is available for Manila and 9 million people
 watch analog TV in Manila area.

Features of ISDB-T system, Band segmentation



ISDB-T can save investment for Mobile Broadcasting



Flexibility of TV program, Multi-broadcasting

Example of TV program 18:00h Time **SDTV SDTV SDTV** (Sport shows) (Variety shows) (Dramas shows) . 19:00h SDTV **SDTV SDTV** (football, another (football, (football, Portablemain program) view) goal scenes) receiver services 20:00h **SDTV** (One-Seg) HDTV **Baseball** (special Movie(low bit rate) channel) 21:00h HDTV Movie

ISDB-T can provide Interactive TV service



Lineup of One-Seg receivers



A large variety of mobile TV receivers attract new viewers.

Economical Benefits for Broadcasters

- Broadcasters do NOT need to pay any commission / usage charge for ISDB-T

- Broadcasters can get mobile TV market without additional investment.

- ISDB-T creates business chance by new services with portability and interactivity.

Emergency Warning System



No difference in price of receivers among standards.



- -Difference between Digital TV systems is only a part of software installed in modulator/demodulator.
 -The difference is only 1% of whole cost of the
- equipments which is negligible for price.

Change in Price of Major Flat Panel Displays (FPDs)





ISDB-T Set Top Box with HD input is available at USD 30 when you start the ISDB-T in Philippine !

Japanese government decided to procure over 2.6 million STB for low income households. That will surely accelerate price-reduction of ISDB-T STB.



ISDB-T receivers and STBs can accommodate any kinds of conditional access systems (CAS). CAS is an extensive part as same as a graphic card for PC





TV Start-Up Ceremony in Brazil

Digital TV Start-Up Ceremony was held in Brazil on 2nd December 2007.



H. E. Mr. Lula, President of Brazil, attended and made a speech.



H.E. Mr. Mori, Vice-Minister for Communication of Japan, introduced mobile receiver (One-Seg) to H.E. Mr. Costa, Minister for Communication of Brazil.

Global manufacturers in Brazil

- Gradiente
- Philips
- Positivo
- Tec Toy
- Semp Toshiba
- Ebcom
- Samsung

- LG
- Envisio
- Aiko
- Amplimatic
- Thevear
- Visiontec

- Panasonic
- Sony
- Olévia
- Telesystem
- Plasmatic
- Coship



GSM+3G+TV Digital



LCD & PLASMA



USB One-Seg receiver



You can build up broadcast network effectively and affordably thanks to <u>excellent robustness of ISDB-T</u> which might allow you to cover service area <u>with small</u> <u>number of stations than DVB-T</u>. Viewer can received with indoor antenna.

Only ISDB-T enables <u>both fixed TV service and mobile TV service at the same</u> <u>time within One channel and One transmitter.</u> This excellent feature provides you <u>New Business Chance</u> without additional investments.

All ISDB-T STBs are applicable for HD TV, while DVB-T STB is NOT applicable for HD TV completely.

◆ The number of ISDB-T Receivers is larger than that of DVB-T.

The number of DVB-T Receivers in 6MHz is very small. **ISDB-T STB with affordable price** is ready.

Only ISDB-T provides <u>Emergency Warning System(EWS)</u> that contributes to your social responsibilities under natural disasters such as typhoons and tsunamis.



Thank you for your attention ! Salamat po! Hideo FUSEDA

Ministry of Internal Affairs and Communications