

ISDB-T Activities in Peru

— *Our Neighbors Separated by the Pacific Ocean* —

Katsumasa Hirose

Engineering Administration Department
General Affairs Division
Japan Broadcasting Corporation (NHK)



1. Introduction

In March 2010, Peru became the second country in Latin America to start digital terrestrial broadcasting based on the Japanese system (ISDB-T: Integrated Services Digital Broadcasting - Terrestrial). In October 2012, I began a two-year assignment in Peru to promote ISDB-T, taking over from the former JICA specialist who had been working there since 2009. This article presents an overview of my activities.

2. ISDB-T introduction in Peru

Peru's master plan for ISDB-T divides the country into four regions by population size. It specifies a frequency plan and provides deadlines for both the start of ISDB-T and the end of analog broadcasting (ASO: Analog Switch Off). When I arrived, Peru had a total of eight terrestrial digital TV stations — seven nationwide TV stations in Lima (the capital city), and one local TV station in Cusco (the gateway city to the Machu Picchu World Heritage Site). Since the master plan indicated that ISDB-T in the Lima metropolitan area would start by June 2014, I visited the local TV stations in Lima to offer much advice about the process of introducing ISDB-T. As a result, a further 13 TV stations were able to start digital broadcasts by the appointed time. In addition, a TV station with rights to broadcast the 2014 FIFA World Cup was able to start ISDB-T in three provincial cities. Peru is still aiming to commence ASO in the Lima metropolitan area by 2020 and to start ISDB-T across the entire country by 2024.

3. ISDB-T introduction activities

3.1 Supporting ISDB-T introduction in accordance with Peru's master plan

The fourth region in the Peru's master plan includes all the other cities not included in the Lima metropolitan area (first region) and 14 major regional cities (six in the second region and eight in the third region). In March 2013, in accordance with the master plan, the MTC (Peruvian Ministry of Transportation and Communication) published plans of frequency allocation (frequency plans) to be used in 74 cities. These frequency plans provide for a population coverage rate of between 85% and 90% over the whole of Peru.

However, when I took up my post I was struck by how little people knew about ISDB-T. In the cities, the majority of households watch cable television (CATV), and only a few watch television by directly using an antenna. Few people were aware that ISDB-T could be watched for free. To raise the profile of ISDB-T, I held ISDB-T seminars with my counterparts from

the MTC in the regional cities where it would be introduced in the near future. At these seminars, the MTC officials explained Peru's master plan and the frequency plan, and I explained the advantages of ISDB-T, the project of data broadcasting production, and the project introducing the Emergency Warning Broadcasting System (EWBS). Finally, we held eight seminars with the MTC that over 840 people attended, including local government officials, local broadcasters, and university academics. I think these seminars helped to improve people's understanding of ISDB-T.

■ Photo 1: ISDB-T local seminar



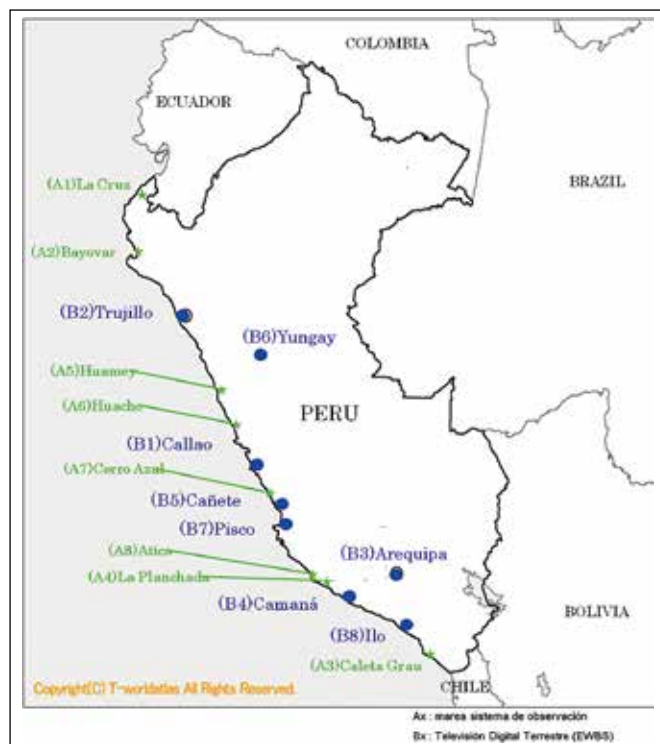
3.2 Supporting EWBS introduction

Like Japan, Peru is situated on the Pacific "Ring of Fire" and occasionally suffers damage from large earthquakes and tsunamis. It is also prone to flooding caused by abnormal weather events such as El Niño. To improve Peru's ability to cope with disasters, we have been promoting the implementation of a system for wide-area disaster prevention funded by the government of Japan. With this system, we plan to construct a national disaster network infrastructure for Peru and to use ISDB-T equipment including the EWBS as components of this infrastructure. In the disaster prevention system using the EWBS, terrestrial digital transmitter facilities will be set up in seven provincial cities. People in these rural areas will then be able to receive emergency information (EWBS signals) multiplexed with the ISDB-T from Lima. To try to complete this project during my stay in Peru, I coordinated with Peruvian agencies and gave technical assistance to IRTP (the Peruvian national broadcaster). Although the Japanese and Peruvian governments released public notices indicating that the disaster prevention system would use ISDB-T in December 2012, unfortunately the facilities could not be introduced during

my time in Peru because the Peruvian side did not complete procedures that would have enabled implementation of the full-scale project. Despite being behind schedule, I am informed that this project will be completed in 2016, when trials of this system using EWBS will start.

On the other hand, the EWBS international harmonization was approved at the 6th ISDB-T International Conference held in Uruguay in May 2013. The harmonization includes international area codes across the country and a mechanism for showing text overlays on TV screens by embedding text information in ancillary areas of the screen. When Peru starts operating the EWBS, it will become the first country to implement this international harmonization.

Figure 1: EWBS pilot site



3.3 Practical support for data broadcasting

To encourage the spread of ISDB-T in Peru, ISDB-T services must be enriched, and data broadcasting (data-casting) provides useful services for this purpose. IRTTP launched a project of data-casting implementation in partnership with INICTEL (the Peruvian national telecommunications research institute), and

Photo 2: On-air sample program of data broadcasts



I provided technical assistance for this initiative. First, in June 2013, I procured a data-casting server from Japan, and installed it at IRTTP. Once the server had been installed, INICTEL and IRTTP worked together to produce weather

information program data-casts. Finally, in July 2014, IRTTP launched weather information data-casting on the terrestrial digital channels. Now, IRTTP broadcasts the updated data-casting program including the weather forecasts, maximum/minimum temperature, humidity, and ultraviolet (UV) index for each region of Lima every day.

4. EWBS receiver development

I also worked on the development of equipment capable of receiving EWBS signals and data-casting. In Latin American countries that have adopted ISDB-T, high-definition TV sets are being sold that are compatible with the so-called Japanese-Brazilian ISDB-T system (ISDB-Tb), but TV sets able to receive both EWBS signals and data-casting have not appeared on the market yet. Thus, I started a project to develop receiver equipment with INICTEL. We donated development kits including STBs (set-top boxes) based on ISDB-Tb, EWBS receiver chips made by a Japanese manufacturer, TS (Transport Stream) modulators, and test stream embedded EWBS. The aims of this project are to implement an EWBS receiver chip in STBs compatible with data-casting and to display superimposed emergency information on TV screens. Unfortunately, the second prototype receiver had just been produced when my deployment in Peru ended. However, I have heard from INICTEL and the JICA Peru office that INICTEL has kept the project going and has finished production of a disaster warning speaker that contains an EWBS receiver chip and sounds like a large siren. If the EWBS starts operating, these disaster warning speakers can be set up on city streets around the reception area. I hope that they will continue with this project in Peru in order to develop a TV-type receiver.

5. Conclusion

Peru has strong ties to Japan. Although Japan and Peru are far apart, they are also neighbors separated by the Pacific Ocean, and the Peruvians strongly hope that Japan will be able to support them in many fields, including ISDB-T. I feel a sense of pride at having spent two busy years in Peru to promote ISDB-T. Another JICA expert has now taken over my role there. I hope that our work will help them to deploy ISDB-T throughout the country and that the EWBS disaster prevention system will eventually be able to save people's lives and property. Finally, I would like to express my sincere gratitude to everyone who supported my efforts during this two-year period.

Photo 3: EWBS-compatible disaster warning speaker

