

## **Philippines adopts NICT's TV White Space database for Free Wi-Fi project**

- Accelerating a project for free Wi-Fi Internet access at public places in the Philippines -

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### **< Glossary >**

**\*1 ICTO**

The Information and Communications Technology Office (ICTO) of the Department of Science and Technology (DOST) is the Philippine Government's lead agency, responsible for ICT related matters. Its priority areas are promotion of the ICT Industry, e-Government, ICT policy development, Internet opportunities for all people and Cybersecurity. <http://icto.dost.gov.ph/>

**\*2 TV White Space**

TV band frequencies which can be used for communication systems without interference to TV broadcastings. Use of TV White Space is permitted under some certain conditions determined by each regulator.

**\*3 Free Wi-Fi Internet Access at Public Places [Project]**

Free Wi-Fi Internet Access at Public Places is a project promoted by ICTO. By this project, free Wi-Fi will be accessible in social places, such as public schools, parks, libraries, national and local government offices, public hospitals, rural health units, airports, seaports, and LRT-MRT stations. <http://icto.dost.gov.ph/wp-content/uploads/2015/03/Free-Wi-Fi-Project-TOR.pdf>

**\*4 White Space Database**

White Space Database (WSDB) is one of the functions to realize TV White Space utilization. The WSDB stores TV broadcasting information including location, transmission power, and antenna height and calculates TV broadcasting area to analyze available channels for secondary use of the frequency. The WSDB may be implemented as a server which automatically responds available TV channels to a radio device according to its location.

### **< Previous press releases from NICT related to TV White Space technologies >**

- Wireless communication in TV white space succeeded, June 7, 2012  
<http://www.nict.go.jp/en/press/2012/06/07en-1.html>
- World's First Portable Tablet Terminal in TV White-space, August 28, 2013  
<http://www.nict.go.jp/en/press/2013/08/28-1.html>
- World's First Breakthrough Achieved for Long-Range Broadband Communications in TV White Space, January 23, 2014  
<http://www.nict.go.jp/en/press/2014/01/23-1.html>
- Trials of TV White Space Communications at 40Mbps in Central London, July 24, 2014  
<http://www.nict.go.jp/en/press/2014/07/24-1.html>

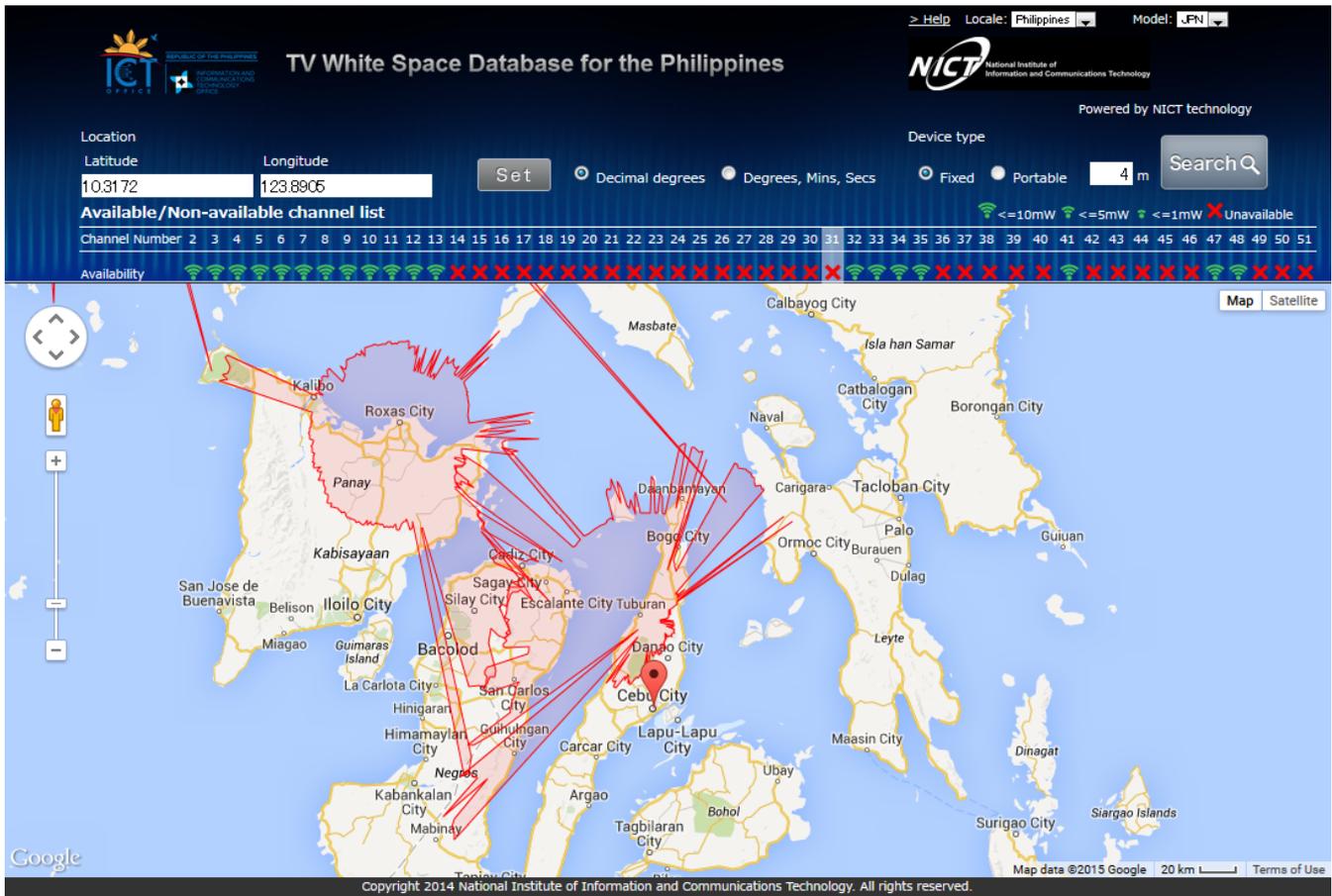


Fig. 1: A screen shot of the White Space Database running with TV broadcasting data of Philippines

The White Space Database stores TV broadcasting information of the Philippines, calculates radio propagation of TV broadcastings according to terrestrial data, and draws TV broadcasting areas.

Fig. 1 shows a screen shot of the White Space Database. The area in red mean calculated TV broadcasting areas on channel 31 in Cebu Island. This channel is used for TV broadcasting in the area in red and is available for wireless systems in the other area as TV White Space. When wireless systems are operated in TV White Space, it is necessary to check whether a wireless system is in the rad area or not. As there are multiple TV channels, it is required to check it throughout the all TV channels. By the way, criteria of the TV channel availability in the database is not so simple as mentioned above since interferences from wireless systems to TV broadcastings also need to be taken into consideration.

It takes time when this analysis is conducted manually for all the TV channels, the White Space Database implements a function to create a list of availability on each TV channel. By dropping a pin on the map, setting some parameters and clicking a button, the White Space Database shows a list of channel availability at the top of the screen as shown in Fig. 1. The green mark means available and the red mark means unavailable for wireless systems to use the channel.

Actual operation of the White Space Database is automated and not manipulated each time manually by operators. A location taken by GPS of a wireless system is sent to the White Space Database and the list of TV White Space is automatically calculated. The list is sent back to the wireless system and channel(s) are selected by the wireless system for its operation.