

WHITE SPACE DEVICES

Spectrum below 1 GHz is valuable for applications requiring favourable propagation conditions either for wide area coverage or improved indoor coverage. An increasing number of commercial organizations and regulators are investigating the use of spectrum that is locally unused by broadcasting. The EBU has actively participated in defining the complex technical and operational conditions required for more efficient use of spectrum while ensuring the protection of the broadcasting services.

BACKGROUND

The interleaved use of UHF spectrum (between 470 and 790 MHz) by terrestrial broadcasting networks leaves some spectrum locally available for use by a range of other applications. Research & Development organisations as well as regulators inside and outside Europe have been working for several years on the possible usages of these so-called Television White Spaces.

While white space devices (WSDs) are being implemented in the TV White Spaces in the USA, in Europe we are still at the definition stage. The CEPT (Conference of European Post and Telecommunication Administrations) has finalized two reports on technical and operational requirements for the operation of WSDs (ECC reports 185 and 186). One major agreed feature in these requirements is the required use of Geolocation databases (Fig. 1) to ensure the protection of DTT (Digital Terrestrial Television) services, PMSE (Programme Making and Special Events) applications and other incumbent services. Geolocation is the capability of a device to know its geographical position and to transmit it to a database which identifies the suitable channels and transmit powers that the device can use in its location.

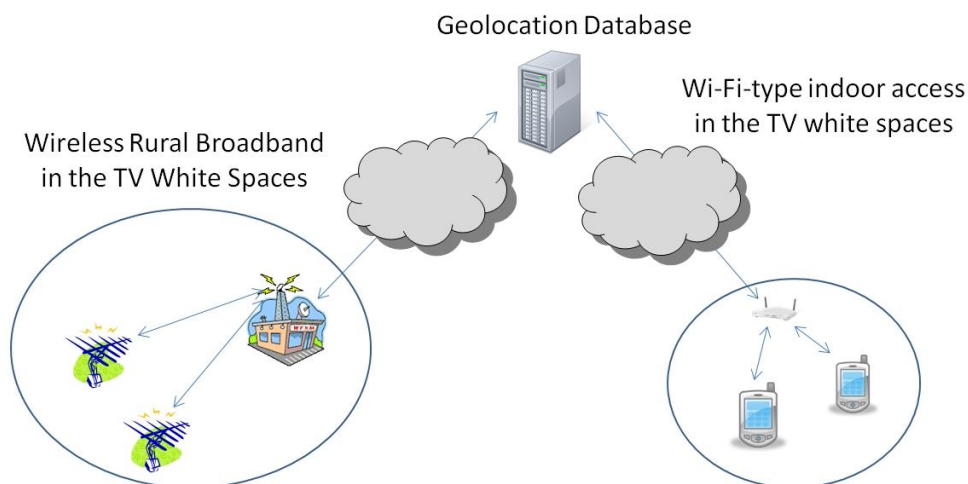


Figure 1: White space devices applications using a geolocation database.

THE CHALLENGE FOR PUBLIC SERVICE MEDIA

The challenges for broadcasters are twofold: firstly, protecting the DTT services and other PMSE applications that use the UHF spectrum; and secondly, making use of the opportunities offered by this possible use of TV White Spaces.

On the first subject, the CEPT project team SE43 has defined the technical basis for the operation of the WSDs but has left a large degree of freedom for national regulators to define the actual level of protection that should be afforded to their incumbent services and applications. Therefore broadcasters need to ensure on their national level that the afforded protection is adequate when the time comes to implement regulations for WSDs.

On the second subject, broadcasters need to investigate the applications which provide the highest added value for their services from using the TV White Spaces and to promote the development of such applications.

Some EBU Members, like BBC and IRT, are actively involved in the CEPT work and in European projects dealing with the subject of WSDs. Broadcast Network Operators like Arqiva and Abertis are also involved in studies and field trials of WSDs.

WHAT IS THE EBU DOING?

The EBU has actively participated in the CEPT work defining the technical and operational conditions for the operation of WSDs, within the project team SE43. Technical studies and proposals made by the EBU within this project team have been well received and many of these proposals have been included in the final reports of the group. The work on this subject has been carried out by the EBU project group SDB (Sharing with Digital Broadcasting) under the SMR (Spectrum Management and Regulation) Strategic Group.

Another work stream was set up in the CEPT, the project team FM53, to deal with further requirements related to white space devices in the TV white spaces but also with implementing the Licensed Shared Access (LSA) and defining general objective on reconfigurable radio systems (RRS).

Some regulators in Europe, like Ofcom (UK) and Ficora (Finland), are particularly active with regard to preparing the implementation of WSD. However, no firm plans have been announced so far for their introduction in Europe.

The EBU will pursue its involvement on behalf of its Members in this important and complex area of work.

FIND OUT MORE

EBU SDB group

tech.ebu.ch/groups/sdb

CEPT PT FM53

<http://cept.org/ecc/groups/ecc/wg-fm/fm-53>

Former CEPT PT SE43

<http://www.cept.org/ecc/groups/ecc/closed-groups/se-43>