

## **"RSPG OPINION ON COGNITIVE TECHNOLOGIES" (RSPG10-348 draft for consultation)**

### **VPRT Position**

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The Association of Commercial Broadcasters and Audiovisual Services in Germany, VPRT, represents the interests of approximately 150 commercial broadcasters as well as companies offering telemedia services in Germany. About 90 members out of the 150 are active in the television sector. The future development in the UHF-Band is of utmost importance to our television service members. We therefore welcome the opportunity to comment on this draft of the RSPG opinion.

We would like to take this occasion to highlight some general views on cognitive radio technologies which we hope are taken into consideration when further recommendations in this area, also in terms of possible future regulatory steps, are made by RSPG.

#### **1. Use of white spaces devices only in bands not used by broadcasters and PMSE**

In terms of efficient spectrum use cognitive radio is an interesting technology concept. However, for the time being the use of **cognitive radio systems** (with the techniques sensing, geo-location database and beacon) in the 'white spaces' of the frequency band 470-790 MHz **cannot ensure the protection** of the existing broadcasting services and PMSE. The ECC Draft report 159 has shown that several problems are still unsolved:

Firstly, there is **no guarantee for a reliable detection** of the presence/absence of the broadcasting signals at the distance corresponding to the interference potential of a white spaces device. Secondly, inclusive geo-location, in connection with access to the database, is neither reliable enough to guarantee a correct identification of available channels at a given location nor can it avoid interference into DTT and cable receivers on the possible co-channel nearby areas.

This leads us to the **conclusion** that the use of **white spaces devices outside of broadcasting bands** can only be a future scenario if the three cognitive techniques (sensing, geo-location database and beacon) can provide full protection to the existing broadcasting services and PMSE.

#### **2. Protection of broadcasting services and PMSE**

The **protection of broadcasting services and PMSE** must be the **highest priority**. The use of white spaces devices in the frequency band 470-790 MHz shall not cause any interference to broadcasting services and PMSE, and both services need to be fully protected.

If there is a white spaces device detecting no signals of broadcast services or PMSE, but the database shows one or more channels used by broadcasting services or PMSE, the device should switch off any transmission until the database shows no used channels by broadcast services or PMSE in this area.

Or in the opposite case: If there is a white spaces device detecting signals of broadcast services or PMSE, but the database shows no used channels by broadcast services or PMSE, the device should switch off any transmission until the database shows no used channels by broadcast services or PMSE and the white spaces device detecting no signals of broadcast services or PMSE in this area.

### **3. Database with high level of detail necessary**

Personal/portable devices are likely to go wherever their users go: within houses and offices, along the street, on a train or bus, in a car etc.

A cognitive radio will be required to monitor the band for incumbent users' transmissions or be **informed continuously about the available channels** before being allowed to transmit on locally unused channels.

Cognitive devices have to measure their location and consult a "geo-location" database to determine which frequencies they can use at their location (location which they have indicated to the database). **Parameters** such as location accuracy and frequency-information delivered by the database are important and should provide **a high level of detail**.

If the connection to the database is interrupted or a low detail level is present, the device has to interrupt any use of cognitive radio systems (CRS) in the 'white spaces'.

### **4. Additional studies necessary**

The white spaces device has to avoid any harmful interference by collecting information on spectrum for transmissions using the cognitive techniques. These functions still include some **unclear situations**, consequently **additional studies are necessary**.

#### **Summary**

1. Use of white spaces devices only in bands not used by broadcasters and PMSE
2. Protection of broadcasting services and PMSE
3. Database with high level of detail necessary
4. Additional studies necessary