ITU-R Studies on CRS, including White Spaces

Philippe Aubineau
Counsellor, ITU-R Study Groups, Radiocommunication Bureau, ITU
Cognitive radio system (CRS) – Approved in Report ITU-R SM.2152
A radio system employing technology that allows the system to obtain knowledge of its operational and geographical environment, established policies and its internal state; to dynamically and autonomously adjust its operational parameters and protocols according to its obtained knowledge in order to achieve predefined objectives; and to learn from the results obtained.

White Space Device
Devices that can use White Space spectrum without causing harmful interference to protected services by employing required cognitive capabilities.
White Space

- ‘White Space’ is a label indicating a part of the spectrum, which is available for a radiocommunication application (service, system) at a given time in a given geographical area on a non-interfering / non-protected basis with regard to other services with a higher priority on a national basis.

- “White space; spectrum white space
A label for temporally (time) and geographically [underutilized, unused] frequencies.”

TV White Space

A portion of spectrum in a band allocated to the broadcasting service and used for television broadcasting that is identified by an administration as available for wireless communication at a given time in a given geographical area on a non-interfering and non-protected basis with regard to other services with a higher priority on a national basis.
Framework of ITU-R Studies

WRC-12 OUTCOMES:

➢ No need to change the ITU Radio Regulations (RR). i.e. contains enough flexibility to use CRS technology in some services, in accordance with RR & national regulations

➢ Deployment and use of CRS – see Rec. 76 (WRC-12) recommends that administrations participate actively in the ITU-R studies conducted under Res. ITU-R 58 (RA-12), recognizing that a) operation in accordance with the RR and b) protection of stations of other administrations operating in accordance with the RR

RA-12 OUTCOMES:

➢ Studies on implementation and use of CRS (Res. ITU-R 58): operational & technical requirements, characteristics, performance and possible benefits, with attention given to enhancing coexistence & sharing among radio services
ITU-R Studies (1/2)

ITU-R Working Party 5A: In conjunction with Question ITU-R 241-2/5 on CRS in the Mobile Services

- Report ITU-R M.2225 (fomer [LMS.CR1]): Introduction …
- Working towards a PDN Report ITU-R M. [LMS.CR2] on CRS in the land mobile services
- Seminar on CRS and the use of WS (18 Nov’13)

ITU-R Working Party 5C: Fixed Service (incl. FWS)

- Working towards a PDN Report ITU R F.[FS-SDR] on the impact of SDR and CRS on the fixed service

ITU-R Working Party 5D: IMT Systems

- Report ITU-R M.2242: CRS specific for IMT systems
- Additional studies of CRS implementation in IMT
ITU-R Studies (2/2)

ITU-R Working Party 6A: Terrestrial broadcasting service
- PDN Report ITU R SM.[ASSESSDTTBCRS] on assessment of interference into the broadcasting service from cognitive devices in the frequency band 470 – 790 MHz

ITU-R Working Party 1B: Spectrum Management issues
- Report ITU-R M.2152: Definition of SdR and CRS
- Studies on WRC-12 Agenda item 1.19
- Working towards a PDN Report ITU R SM.[WHITE-SPACE] on SM principles and spectrum engineering techniques for the use of WS by radio sys. employing cognitive capabilities

ITU-R Working Party 1C: Spectrum Monitoring issues
- Studies in response to Question ITU-R 235/1 on Spectrum Monitoring Evolution, including impact of CRS on SMonit.
- Draft new Recommendation ITU-R SM.[SPEC_MON_EVOLUTION]
- Working towards a PDN Report ITU R SM.[SPEC_MON_EVOLUTION]
Future relevant ITU-R Meetings

WP 5D  →  [9 – 16 Oct. 2013]

WP 6A  →  [12 – 20 Nov. 2013]

WP 5A  →  [18 – 28 Nov. 2013]

WP 5C  →  [18 – 27 Nov. 2013]

WP 5C  →  [20 – 28 Jan. 2014]

WP 1B  →  [Feb. 2014]

WP 1C  →  [Apr./May 2014]

WP 1C  →  [May 2014]

WP 1C  →  [June 2014]

(see the ITU-R Meetings schedule at www.itu.int/en/events/Pages/Calendar-Events.aspx?sector=ITU-R)
Radio Regulations
Edition of 2012

http://www.itu.int/pub/R-REG-RR-2012


Available: end-November 2012. (Online versions in all 6 languages are free of charge --at least through mid-2014--as per ITU Council 2012’s decision)

<table>
<thead>
<tr>
<th>ITEM DETAIL</th>
<th>ARTICLE</th>
<th>PRICE</th>
<th>CART</th>
</tr>
</thead>
<tbody>
<tr>
<td>MULTILINGUAL DVD</td>
<td>37268</td>
<td>398 CHF</td>
<td>ADD</td>
</tr>
<tr>
<td>ENGLISH Zipped PDF format</td>
<td>Free of charge</td>
<td>DOWNLOAD</td>
<td></td>
</tr>
<tr>
<td>ENGLISH Zipped MS Word format</td>
<td>Free of charge</td>
<td>DOWNLOAD</td>
<td></td>
</tr>
<tr>
<td>ENGLISH A5 Paper (hard-copy complete set)</td>
<td>37262</td>
<td>398 CHF</td>
<td>ADD</td>
</tr>
<tr>
<td>ARABIC A5 Paper (hard-copy complete set)</td>
<td>Free of charge</td>
<td>DOWNLOAD</td>
<td></td>
</tr>
</tbody>
</table>

16 July 2013, Geneva
Thank you for your attention!

www.itu.int/ITU-R/go/rsg