

ITU-R Working Party 5A



Seminar on Cognitive Radio Systems
and the use of White Spaces

18 November 2013, ITU, Geneva

ITU-R Studies on CRS, including White Spaces

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ITU-R Definition/Terminology



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.

TV White Space – see terminology in [Report ITU-R M.2225](#)

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.



Draft ITU-R Definitions/Descriptions

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.”

White Space Device

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

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 (1/3)



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 (former [LMS.CR1]): Introduction ...
- Working towards a PDN Report ITU-R M. [LMS.CR2] on CRS in the **land mobile services**
- This 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 (2/3)



ITU-R Working Party 6A: Terrestrial broadcasting service

- PDN Report ITU R BT.[ASSESSDTTBCRS] on assessment of interference into the broadcasting service from cognitive devices in the frequency band 470 – 790 MHz
- See also new related contributions to the Nov'13 meeting

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 Spectrum Monitoring
- New Recommendation ITU-R SM.2039
- Working Doc. towards a PDN Report ITU R SM.[SPEC_MON_EVOLUTION]



ITU-R Working Party 1B: Spectrum Management issues

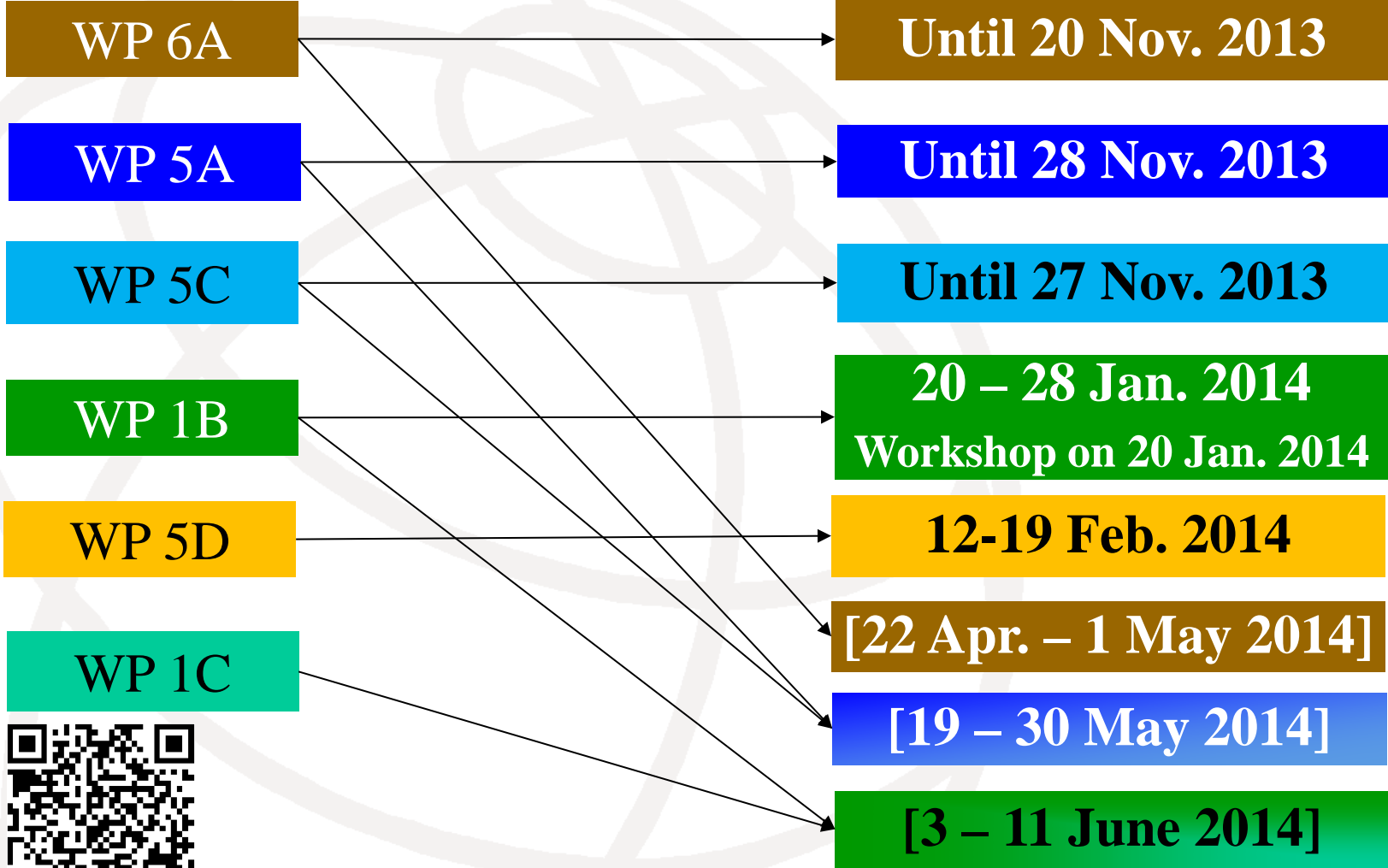
- Report ITU-R SM.2152: Definition of SdR and CRS
- Studies on WRC-12 Agenda item 1.19 (2008-2012)
- Working document towards a PDN Report ITU R SM.[WHITE-SPACE] on SM principles and spectrum engineering techniques for the use of WS by radio sys. employing cognitive capabilities
- Workshop on Spectrum Management related issues (20 Jan'14)

Possible issues:

- Creation & responsibility/maintenance of spectrum/geolocation database for use by WS Devices
- WS network authorization/licensing regime
- Protection of incumbent radiocommunication services
- Coordination in border areas
- Economic aspects, etc.



Future relevant ITU-R Meetings



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

Radio Regulations 2012 Edition



Radio Regulations
Edition of 2012

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



The Radio Regulations, Edition of 2012, contains the complete texts of the Radio Regulations as adopted by the World Radiocommunication Conference (Geneva, 1995) (WRC-95) subsequently revised and approved by the World Radiocommunication Conference (Geneva, 1997) (WRC-97), the World Radiocommunication Conference (Istanbul, 2000) (WRC-2000), the World Radiocommunication Conference (Geneva, 2003) (WRC-03), the World Radiocommunication Conference (Geneva, 2007) (WRC-07) and the World Radiocommunication Conference (Geneva, 2012) (WRC-12), including all Appendices, Resolutions, Recommendations and ITU-R Recommendations incorporated by reference.

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)



	ITEM DETAIL	ARTICLE	PRICE	CART
MULTILINGUAL	DVD including all 4 volumes, in all six official languages of ITU	37268	398 CHF	ADD
ENGLISH	Zipped PDF format		Free of charge	DOWNLOAD
	Zipped MS Word format		Free of charge	DOWNLOAD
	A5 Paper (hard-copy complete set)	37262	398 CHF	ADD
ARABIC			Free of charge	DOWNLOAD



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attention!***

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