

## RESOLUTION ITU-R 58

### **Studies on the implementation and use of cognitive radio systems**

(2012)

The ITU Radiocommunication Assembly,

*considering*

- a) that there is a need for ITU-R studies to give guidance for the evolution of cognitive radio systems (CRS);
- b) that the definition of cognitive radio system is contained in Report ITU-R SM.2152;
- c) that CRSs are expected to provide flexibility and improved efficiency to the overall spectrum use;
- d) that the introduction of CRS technology in any radiocommunication service has the potential to improve spectrum efficiency within that radiocommunication service;
- e) that a range of capabilities of CRSs may facilitate coexistence with existing systems and may allow sharing in bands where it was not previously considered feasible;
- f) that CRS capabilities developed for sharing purposes will be specific to the systems of a radiocommunication service;
- g) that the introduction of CRSs in any radiocommunication service needs to ensure that coexistence within radiocommunication services and the protection of other radiocommunication services sharing the band and in the adjacent bands are maintained or improved;
- h) that special and careful consideration of CRS use in radiocommunication services in bands shared with other radiocommunication services, due to their specific technical or operational characteristics, such as space services (space-to-Earth), passive services (radio astronomy, Earth exploration-satellite service and space research service) and radiodetermination services, is needed;
- j) that for radiocommunication services employing CRSs, the particular set of capabilities and characteristics and sharing conditions with other radiocommunication services will depend on the frequency band and other technical and operational characteristics;
- k) that further studies are needed on the implementation of CRS technologies within a radiocommunication service and on sharing among different radiocommunication services with regard to the capabilities of CRS, in particular dynamic access to frequency bands,

*recognizing*

- a) that CRSs are a collection of technologies, not a radiocommunication service;
- b) that studies on regulatory measures related to the implementation of CRS are outside the scope of this ITU-R Resolution;
- c) that any radio system implementing CRS technology needs to operate in accordance with provisions of the Radio Regulations;
- d) that there are plans to deploy CRS in some radiocommunication services,

*noting*

- a) that considerable research and development is being carried out on CRS;

b) that some international organizations have initiated work on CRS,

*resolves*

1 to continue studies for the implementation and use of CRS in radiocommunication services;

2 to study operational and technical requirements, characteristics, performance and possible benefits associated with the implementation and use of CRS in relevant radiocommunication services and related frequency bands;

3 to give particular attention to enhancing coexistence and sharing among radiocommunication services;

4 to develop relevant ITU-R Recommendations and/or Reports based on the aforementioned studies, as appropriate,

*invites*

the membership to participate actively in the implementation of this Resolution by, among others, providing contributions to ITU-R and submitting relevant information from outside ITU-R.