QUESTION ITU-R 241-3/5

**Cognitive radio systems in the mobile service**

(2007-2007-2012-2015)

The ITU Radiocommunication Assembly,

*considering*

*a)* that the use of mobile radio systems is growing at a rapid rate globally;

*b)* that more efficient use of spectrum is essential to the continued growth of such systems;

*c)* that cognitive radio systems (CRSs) may facilitate the more efficient use of spectrum in mobile radio systems;

*d)* that cognitive radio systems may offer functional and operational versatility and flexibility in mobile radio systems;

*e)* that considerable research and development is being carried out on cognitive radio systems and related radio technologies;

*f)* that it is beneficial to identify the technical and operational characteristics of a CRS;

*g)* that Report ITU-R SM.2152 contains the ITU-R definition for a CRS;

*h*) that ITU-R Reports and/or Recommendations on cognitive radio systems would be complementary to other ITU-R Recommendations on mobile radio systems;

*i*) that Reports ITU-R M. 2225, M.2242 and M.2330 contain studies related to CRS,

*noting*

that there are network aspects related to the control of cognitive radio systems,

*recognizing*

*a)* that CRSs are a collection of technologies, not a radiocommunication service;

*b)* that any radio system implementing CRS technology within any radiocommunication service shall operate in accordance with the provisions of the Radio Regulations applicable for that specific service in the related frequency band,

*decides* that the following Questions should be studied

1 What are the closely related radio technologies and their functionalities that may be a part of cognitive radio systems?

2What key technical characteristics, requirements, performance improvements and/or other benefits are associated with the implementation of cognitive radio systems?

3What are the potential applications of cognitive radio systems and their impact on spectrum management?

4How can cognitive radio systems facilitate the efficient use of radio resources?

5What are the operational implications (including privacy and authentication) of cognitive radio systems?

6 What are the cognitive capabilities and CRS technologies that could facilitate sharing between the mobile service and other services, such as broadcasting, mobile-satellite or fixed, as well as passive services, space services (space‑to-Earth) and safety services, taking into account the specificity of all these services?

7What are the cognitive capabilities and CRS technologies that could facilitate coexistence of the systems in the mobile service?

8 What factors need to be considered for the introduction of CRS technologies in the land mobile service?

*further decides*

1that the results of the above studies should be included in one or more Recommendations, Reports or Handbooks;

2that the above studies should be completed by the year 2019.

Category: S2