DESIGN OF COGNITIVE RADIO PLATFORM FOR REAL TIME VOICE OVER IP AND VIDEO APPLICATIONS

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Abstract

The growing popularity of wireless video and VoIP communication poses a significant challenge to existing network operators. Cognitive Radio Networks (CRN) have emerged as a vital technology for the upcoming 5G network, primarily due to their dynamic spectrum allocation capabilities, which help alleviate the problem of spectral congestion. However, the implementation of CRN faces a range of challenges in multiple dimensions. Despite these hurdles, CRN offers significant advantages, such as enhancing the reliability and efficiency of multimedia applications, even when spectrum resources are limited.

An apparent deficiency in the existing scenario is the lack of comprehensive research towards the Quality of Experience (QoE) enhancement for the video and VoIP applications over CRN. Furthermore, there is a distinct need for a specialized CRN management strategy tailored to video application deployment. This underscores the necessity for ongoing research efforts in this domain to fully exploit the potential benefits of CRN for video, VoIP, and other real-time communications.

To adapt to the unique characteristics of CRN, it is imperative to envision novel resource management approaches and handoff policies, while also exploring integration possibilities with advanced technologies. These various dimensions are thoughtfully addressed in the research article, which conducts thorough investigations into different video applications and provides a comprehensive analysis of their diverse Quality of Service (QoS) requirements from both a system perspective and within the application domain and finally device efficient strategies to overcome existing problems.