

Review on QoS provisioning approaches for supporting video traffic in IEEE802.11e: challenges and issues

ABSTRACT

Recently, the demand for multimedia applications is dramatically increased, which in turn increases the portion of video traffic on the Internet. The video streams, which require stringent Quality of Service (QoS), are expected to occupy more than two-thirds of web traffic by 2019. IEEE802.11e has introduced HCF Controlled Channel Access (HCCA) to provide QoS for delay-sensitive applications including highly compressed video streams. However, IEEE802.11e performance is hindered by the dynamic nature of Variable Bit Rate (VBR) video streams in which packet size and interval time are rapidly fluctuating during the traffic lifetime. In order to make IEEE802.11e able to accommodate with the irregularity of VBR video traffic, many approaches have been used in the literature. In this article, we highlight and discuss the QoS challenges in IEEE802.11e. Then, we classify the existing QoS approaches in IEEE802.11e and we also discuss the selection of recent promising and interesting enhancements of HCCA. Eventually, a set of open research issues and potential future directions is presented.

Keyword: 802.11e; HCCA; MAC; Multimedia; VBR; QoS; Survey