

Call Admission Control for Mobile Multimedia Wireless Networks

Gyu-Dong, Jo

Department of Mathematics, Korea University, Seoul 136-701, KOREA

e-mail : plus_jo@korea.ac.kr

ABSTRACT

Call admission control(CAC) in multimedia wireless communications plays a significant role in providing the desired quality of service to users and achieves a high resource allocation efficiency. We propose and analyze a CAC based on threshold policy for a wireless cellular system supporting both voice calls and data calls. We model this multimedia system with proposed CAC by two dimensional Markov chain. The analysis of the system is performed using matrix analytic method. We obtain performance measures such as call blocking probability and mean delay of data call. The Dynamic Channel Stealing (DCS) method is that free voice channels are used for data transmission. We model the DCS system which use the voice silence periods for data transmission by three-dimensional Markov chain. The technique such as *silence detection* is possibly used to improve the mean data packet delay.