UNEQUAL ERROR PROTECTION EMPLOYING TRELLIS CODED MODULATION

FOR H.264/AVC VIDEO OVER WIRELESS CHANNELS

G. H. RUSHAA & M. A. HOSANY

Research Scholar, Department of Electrical & Electronic Engineering, Faculty of Engineering,
University of Mauritius, Reduit, Mauritius

ABSTRACT

With the advent of communication technologies, we have more and more multi-media services available. Therefore, the main focus is to transmit video at high quality, and this concept tends to continue in the years to come. In this work, a Trellis Coded Modulation (TCM) system is used in order to achieve high video quality. The aim is to reduce the effect of transmission errors on the transmitted H.264 AVC by using the concept of Unequal Error Protection (UEP). UEP gives higher priority to the most important bits and vice-versa. The performance of the TCM system is investigated by varying the Doppler shift (Hz) and the Eb/No values which will reflect on the quality of the received signal. The signal is transmitted through the Rayleigh channel, followed by the Additive White Gaussian Noise channel (AWGN). The output of this system is to prove that the relation between Energy of Bit to Noise Ratio (Eb/No) and Bit Error Rate (BER) is as expected in theory. The design, implementation and simulation are carried out using the MATLAB R2008b. The performance of the system can be illustrated using graphical and analytical representation of BER with respect to the applied Doppler shift.