CHAPTER 5

CONCLUSION

This research work focused on transmission of HD video through Ultra Wide Band networks along with appropriate compression technique and ANFIS rate controller. The perceptible index of multiple errors such as Bit Error Rate (BER), Mean Square Error (MSE) and Peak Signal to Noise Ratio (PSNR) was significantly reduced by applying the H.264 /AVC or H.265/HEVC compression techniques. Comparison between the encoder, the H.265 /HEVC showed minimal error. The apparent bit error rate manifested on transmission of compressed video was considerably reduced by applying the ANFIS rate controller. On adoption of H.264/AVC compression techniques without ANFIS rate controller, the BER, MSE and PSNR was found to be 0.034, 117 and 27.43dB respectively. At the same time on enabling the ANFIS rate controller over the H.264/AVC encoder, the BER, MSE and PSNR was show 0.032, 48.8 and 32.96 dB. From this analysis, it is revealed that, the H.264/AVC encoder with ANFIS rate controller exhibited minimal error.

By applying of H.265/HEVC compression technique without ANFIS, the BER, MSE and PSNR found to be 0.0057, 38.5 and 37.92dB respectively. On enabling the ANFIS with encoder (H.265/HEVC), the BER, MSE and PSNR was found to be minimal. (BER=0.00037 and MSE=5.09, PSNR=59.26 dB). In comparison of BER, MSE and PSNR in between H.264/AVC and H.265/HEVC along with ANFIS rate controller revealed, the
H.265/HEVC encoder is found better on minimizing the errors occur during the compressed video transmission.

From this work, it’s conclude that HD Video transmission on UWB networks using H.265/HEVC encoder with ANFIS rate controller technique, is feasible for to improve the decoded video quality.

5.1 FUTURE RESEARCH

In this section, some recommendations for future work as an expansion of this research work are presented. These recommendations are beyond the scope of this thesis work, and left for the researchers who wish to continue the exploration. The recommendations are as follows:

- This thesis work is limited to using 1080p resolution HD video, which uses progressive scanning. In future, the proposed parameter settings can be applied to higher resolution HD videos, such as, 4K UHD (3840 × 2160 progressive scan), True 4K (4096 × 2160), 8K UHD (7680 × 4320 progressive scan) and True 8K (8192 × 4320) both for progressive and interlace scanning to observe their performance.

- In this research UWB communication channel is used as wireless transmitting link. In future, other wireless technologies, such as, the Wireless Home Digital Interface (WHDI), the Wireless HD, and the IEEE802.11n, can be studied to evaluate their performance as HD video transmitting medium.