

5. Conclusion and Recommendation

5.1 Conclusion

This Research mainly aimed to study, analyze and simulate VoIP over WLAN, to explore the quality of service of VoIP over WLAN in term of (jitter, delay and throughput). To materialize these objectives, two phases is applied, **Phase one: OPNET** software program is used to implement and simulate VoIP over WLAN Network, and **phase two:** exploring results in term of tables and graphs .**Two standers** of WLAN is used to analyze the performance of different networks in the simulations, these standards are data rate **54 Mbps 802.11a** and **600 Mbps 802 .11n**, the network consists of different number of nodes and simulation time 240sec. After the results are obtained and discussed, it has been concluded that WLAN 802.11a ipv4 Standards is considered the best choice for VoIP when our concern in throughput, ipv6 have better performance in delay and jitter than ipv4. Also concluded that the ipv6 is better for real time applications when using 802.11 n more throughputs and the delay more stable , smaller jitter.

5.2 Recommendation

This study focused on voice applications over WLANs. There are many other uses and applications when using WLANs should be studied and discussed, such as video, text, and data over IP. The performance matrices used to evaluate the performance of VOIP over WLAN in different networks were jitter, delay and throughput; But there are many other matrices have not been discussed and should be studied in future, such as bit error, traffic load, MOS, packet loss, Echo, and Trade off. It is also important to study and evaluate the performance of different types of networks such as UMTS, 4G, and LTE networks .The limitation of this project that used academic edition of OPNET software program that give a small benefit of it to use it.