# Investigation of Superior Voice Quality Measurement in WiFi Network with Virtual Technology Architecture

**N. SARAVANAKUMAR[1] & K. SAKTHISUDHAN[2*]**

[1]Department of Electronics and Communication Engineering,
Bannari Amman Institute of Technology, Sathyamangalam, Tamilnadu, India.
[2]Department of Electronics and Communication Engineering,
Adhi College of Engineering & Technology, Sankarapuram, Kanchipuram, Tamilnadu, India.
*Corresponding author E-mail: drkssece@gmail.com

## ABSTRACT

The IEEE 802.11 standard networks using The Virtualization architecture. The multiple of LAN devices are coexisting with a single server. This architecture allows simultaneous connection with every user and also maintains the streaming connectivity management to throughout networks. In video/voice packets are transmitted throughout the whole networks in order to improve the voice clarity (Network Mean opinion score value) among users. Then simultaneously with voice transmission reduces the jitter, end to end delay and network quality management services. (Delay, jitter, throughput and network performance load). The virtual LAN scenario was simulated in the 100 X 100 miles coverage area region. It provides the results are validated during the simulation period.

***Keywords:*** **IEEE 802.11, Quality of service, Network Mean Opinion Score value, Virtual LAN**

## I. INTRODUCTION

In four generation wireless networks provide better coverage area, reduces complexity and improved the speed of delivery. In the virtual LAN is the partitioning in the single network and its combination into different broadcast domains are created. This virtual local area network optimized the enterprise networks. The metric of this architecture, provides wired LAN connection into Wireless LAN architecture. It is one of the intelligence and self monitoring wireless technology. The VLAN is one of the IEEE 802.1Q standard architecture. It is early some proprietary standards like Cisco's Inter Switch Link and 3Com's virtual line trunk router also remain attached to the working of VLAN. The VLAN provides enhanced by mapping VLANs directly to the IP network. These multiple VLANs are identified by the tags inserted into their pockets. The The working of this router also takes place in the Tagged ports and devices which recognize the labelled data packets. Hence the network connections are often undeviating switch to switch or router to switch besides being a direct host to destination link.

The VLAN are classified into two types, they are, Static and Dynamic VLAN. The static VLANs is also called port centred VLANs. Multiple ports are assigned to the VLANS in order to establish a static VLAN architecture. When a static VLAN is established and a device comes into the network, it is automatically adjusted to the existing port settings. On the other hand the dynamic VLANs is created using plenty of soft ware's development and built using Cisco/HP/DELL...etc.. In this dynamic arrangement the network administered allocates the port based on the MAC addresses of the attached devices. Also a user name is assigned to the users for their security operations. Hence whenever a new device is entered into the network it asks for the database settings in order to become the part of Dynamic VLAN

## II. RELATED WORKS

**K. Sakthisudhan et al,** [1] 2012 analyse the performance of the H.323 call setup procedure over the wireless link. They used to call modes of operation over heterogeneous networks. The analytical model provides that the VoIP call set-up performance, jitter and delay in peer to peer networks. Moreover, the call setup performance can be improved significantly using the robust in application link layer such as RTP/RCTP with a comparison of heterogeneous network. **Sajal K. Das et al**, [2]2003 analysed the performance of the H.323 call set-up procedure over wireless links using a simple call model under two modes of operations, namely, Regular and Fast Connect. The proposed model assumes the presence of a Radio Link Protocol (RLP) to avoid high Bit Error Rate (BER) and recommends that the VoIP packets be transferred without any RLP retransmissions, while H.323 control packets are transferred with RLP retransmissions. **Wei Wang et al**, 2005 [3] investigated two major problems of low VoIP capacity in WLAN and unacceptable VoIP performance in the presence of coexisting video traffic from different user application. In the paper they propose a scheme that can improve the VoIP capacity by close to 100% without changing the standard 802.11 CSMA/CA protocol. In addition, [4] **Deyun Gao et al**, 2008 proposed the use of the service differentiation provided by the new IEEE 802.11e standard to solve the bottleneck problem and improve voice capacity. In particular, they propose the allocation of a higher priority access category (AC) to the AP while allocating lower the priority AC to mobile stations. They develop a simple Markov chain model, which considers the important enhanced distributed channel access (EDCA) parameters and the channel errors under saturation and non-saturation conditions. By appropriately selecting the EDCA parameters, it is able to differentiate the services for the downlink and uplink. The experimental results are very promising. With the adjustment of only one EDCA parameter, they improve the VoIP capacity by 20%−30%. **Lin CAI et al, [5]** 2006 did the survey of recent advances in VoWLAN voice capacity analysis, call admission schemes, and medium access control (MAC) layer quality of service (QoS) enhancement mechanisms. In the paper they presented an extensive survey on the voice capacity of an IEEE 802.11- based WLAN and the QoS enhancement mechanisms in the MAC layer. Accurate voice capacity estimation is critical for effective and efficient admission control for VoWLAN.