Abstract

Voice over Internet Protocol (VoIP) has been an interesting topic of research in the last decade. The engrossing increase in the use of VoIP services is resulting in the enormous growth of broadband network. The main objective of this paper is the selection of an appropriate voice compression and decompression (CODEC) schemes depending on the Quality of Service (QoS) of VoIP in different networks. Wired, Wireless Local Area Network (WLAN), Worldwide Interoperability for Microwave Access (WiMAX) and Universal Mobile Telecommunication System (UMTS) networks were implemented in OPNET Modeler. The quality is compared using different QoS parameters like end-to-end delay, MOS, throughput and jitter. The VoIP codecs used in the measurements of QoS are: GSM-FR, G. 711, G. 723. 1 and G. 729A. Simulations showed that G. 711 and GSM- FR are the best schemes that provide high quality of voice in Wireless Local Area Network (WLAN) communications. In WiMAX, G. 729A gives the best quality of VoIP while in UMTS, GSM- FR gives overall best results with respect to all the parameters. Wired model gives the best result irrespective of the codec being used. G. 723. 1 can be used in WiMAX and UMTS along with the wired network depending on conditions. The results analyzed and the performance evaluated will give network operators an opportunity to
select the codec for better services of VoIP for customer satisfaction.

References

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**Index Terms**

Computer Science

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**Keywords**

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