ABSTRACT

The growth of the telecommunications industry is growing so rapidly, start from conventional communications systems that can transmit voice, has now grown to the delivery of picture and video messaging. However, a major problem in real time multimedia services on packet-switched networks is that there is no guarantee of available bandwidth or delay that occurs when the user calls. In addition to network traffic, one that plays a role in multimedia service quality in real time is the codec, which the codec plays a role in the conversion and compression of audio / video input signals to digital signals that can be transmitted on packet-switched networks. In this research we will analyze the performance of codec in VoIP and video call service with G.711 and G.729 audio codec, H.264 and VP8 video codec, in one part of Next Generation Network (NGN) named IP Multimedia Subsystem (IMS).

Based on the results of the tests, in VoIP service G.729 codec capable of producing equivalent Quality of Service to G.711 codec, but with a lower throughput up to 65.8%. While on Video Call service, H264 codec still get lower QoS than VP8 codec. Although not far adrift, only 6.2% in delay, 4.6% on jitter and 1.6% on throughput. In addition, the use of VGA video resolution in Video Call service resulted in lower delay and jitter than HVGA video resolution, with a reciprocal ± 50% increase in throughput.

Keywords : *Codec, G.711, G.729, H.264, VP8, IMS*