## *ABSTRACT*

*Traditional IP networks have been the backbone of global data communications for decades, enabling reliable and scalable data transmission between devices around the world. However, with the growth and development of information technology needs, the management of traditional IP networks has become increasingly complex and has become a serious challenge. Innovations such as software defined networking (SDN) are emerging to address these challenges, but integration between traditional IP networks and SDN is still difficult. Open network operating system (ONOS) created the SDN-IP application to help this integration. This research tests quality of service (QoS) including delay, jitter, throughput, packet loss, convergence time, and BGP best path convergence comparison on video streaming services with two scenarios. The first scenario is carried out from a traditional IP network to a traditional IP network over an SDN network, in the second scenario it is carried out from a traditional IP network to an SDN network. Each scenario is tested with three video resolutions including 360p, 720p, and 1080p. The test results show that the convergence time in the IP to SDN scenario is better with an average value of 2.547 seconds compared to the IP to IP scenario which is worth 3.471 seconds. For testing delay, jitter, throughput, and packet loss, both scenarios have their own advantages and disadvantages, but still get a minimum rating of good and maximum very good according to TIPHON standardization.*



***Keywords:*** *ONOS, Reactive Routing, SDN–IP, Sofware Defined Networking, Video Streaming*