

## **ABSTRACT**

IMS (IP Multimedia Subsystem) became very important network architecture as the development of telecommunication technology toward to NGN (Next Generation Network). IMS (IP Multimedia Subsystem) can combine wireless and wireline technology which offer services that are not only voice but also diverse data services. With IMS, integration of internet-based service can be built with much better QoS than the previous technology.

OpenIMSCore (IMS Open Source) is one of open source software which built based on IMS architecture. OpenIMSCore is developed by one of the institution from Germany named FOKUS in 2006 as one of the solution to convergance fixed and mobile network. OpenIMSCore is a VoIP service server used SIP as their signaling protocol. In this last year project, IMS server is inter-connected with GSM Gateway used Asterisk server as redirect server. ENUM server used to facilitate the interconnection which is able to translate the numbering address such as PSTN (E1.64) to address URI (Uniform Resource Identifier). Thus able to handle VoIP calls to the GSM network.

From testing and analysis the highest average value of PDD (Post Dial Delay) from interconnection between IMS – GSM Gateway is 0.25597 seconds which got interference traffic 80 mbps. As for the lowest average value of PDD is 0.10607 seconds between IMS user which got no interference traffic. In addition, also conducted analysis of the system with parameters are: delay, jitter, throughput, and packetloss. So QoS (Quality of Service) and MOS (Mean Opinion Score) from the system can be determined.

Keyword : NGN, OpenIMS, PDD, VoIP, QoS, Asterisk, MOS