

ABSTRACT

Telecommunication technology at this time has experienced a very rapid development, one of them in mobile communications. This rapid development resulted in many standards of mobile communication systems. This is the underlying emergence of the concept of radio that is defined as software (Software-Defined Radio, SDR) As a more practical solution of the software implementation on the mobile phone is located. With the advancements in technology and devices today it allows us to build a base station using existing and self-developed opensource software. This technology is known as OpenBTS based on 2G network technology provides voice and data services. This OpenBTS technology is an implementation of Software Defined Radio server on 2G service. All OpenBTS-forming software runs on the Linux Operating system and the core network can be virtual and run in a Cloud service.

In this final project implemented a Software Defined Radio server on Cloud Computing. Proxmox VE is used as a platform to build Cloud computing infrastructure and OpenBTS as Software Defined Radio server platform on 2G services . Integration between OpenBTS and Cloud computing aims to virtualize Software Defined Radio server on 2G services so that its use is more flexible For ease of server access. After the design, installation and configuration has been completed, it will be tested and measured system with scenario that is using G-Net Track Lite Software and QoS Measurement Scenario with Wireshark software. From the measurement results are expected to get the QoS results in accordance with the recommendations ITU-T G.114.

From the scenario test results conducted scenarios for the measurement of OpenBTS parameters for voice services, there is no significant difference between communication between line of sight and non line of sight. As for the measurement of QoS done on data services. The QoS measurement results show that the data service connected with OpenBTS meets the standard of ITU-T G.114 recommendations. As for the standard MOS voice service, OpenBTS has a pretty good sound Quality up to a radius of 39 meters with an MOS value given an average of 2.9175.

keywords : *Software Defined Radio, Cloud , Virtualization*