ABSTRACT

In this study, the application used to create a UMTS network was OpenBTS-UMTS version 1.0. OpenBTS is a substitute for conventional BTS which allows mobile phone users to communicate without the need for fees, such as when using a cellular operator network. The hardware used is USRP which is used as an OpenBTS-UMTS network transmitter, the configured network is a UMTS data service network with a working frequency of 1900Mhz.

Install and configure UHD, Libosmocore, OsmoTrx and OpenBTS-UMTS on Ubuntu applications. Installation and configuration are carried out sequentially, then by activating the OpenBTS-UMTS application, when the system has been successfully activated, connect the user to the OpenBTS-UMTS network that has been created for subsequent measurements on the network.

There are three users connected to the OpenBTS-UMTS application who are connected at the same time. The results of the signal strength measurement show that the signal strength is said to be good with an average value of -70.1 dBm of measurements that have been made. Measurements were made ten times with a distance of every 50cm between transmitter and user. In this study, users can only connect to the network without being able to access the OpenBTS-UMTS network because the IMSI and KI users have not been registered to the OpenBTS-UMTS application.

Keyword: *Open Source, UMTS, Open Base Transceiver Station*