ABSTRACT

Indonesia is a maritime country, therefore it is necessary to have an escort in the sea area as an effort to maintain the sovereignty of the Unitary State of the Republic of Indonesia. In carrying out its duties to maintain the sovereignty of the Unitary State of the Republic of Indonesia, the Republic of Indonesia Ship (KRI) requires a communication system that can increase efficiency in coordinating personnel between spaces on board. The communication technology used in this system is VoIP communication technology that runs on SIP and RTP protocols. Therefore, this project will produce a client application system output for the development of client voice terminals that are integrated with the naval voice communication system based on embedded systems that have features to facilitate communication between spaces in ships.

In this Final Project, the focus is on the core application that will run on the Linux OS embedded system and UI apps development. This core application is built using Linphone SDK and C programming language which will be integrated with the user interface and operating system on Beaglebone Black and 4D LCD Cape 7".

The result of the communication system design is that it can exchange voices between users well. In addition, the quality of the communication system generated from testing using Quality of Service (QoS) and Mean Opinion Score (MOS) parameters with calls 7m and 25m away. Both measurements produce good quality in terms of QoS parameters. The MOS value obtained from the QoS calculation with calls within 7m and 25m is in the good category.

Keywords: VoIP, Core Application, Embedded System, Beaglebone Balck, Intranet, QOS