

## **ABSTRACTION**

Nowadays, the improvement of services to the customer is a very important thing to do in order to survive in the telecommunication business. One of the efforts in improving services to the customer is by improving the quality of network owned by telecommunication operators. Cell station is one of many devices in wireless local loop technology that often experiences damage compared to other devices in the technology. Therefore, a specialized system which is able to observe, record, and give out fast and accurate information is needed in order to keep the wireless local loop network in good quality.

For that reason, in this final assignment, a system capable of observing, recording, and giving out fast, continuous, and accurate processed list of information on cell station damage via SMS will be designed. This research is held in the Wireless Local Loop Division, Kandatel Lembong.

The stages organized in this final assignment are initiated by designing a Human-Machine Interface (HMI), a database access, inter-device communications, and finally, the SMS-based information system.

This final assignment is divided into chapters beginning with Chapter I, which consists of background informations, research purposes, and problem restrictions. Chapter II consists of a literature study on Programmable Logic Controller (PLC), Human-Machine Interface (HMI), and SMS Gateway. Chapter III consists of the problem definitions and a conceptual modelling of the system that will be designed. Chapter IV consists of the system design itself along with its analysis written on Chapter V. And finally, Chapter VI will provide conclusions and suggestions upon this final assignment results.

From the results of this research, it may be concluded that by implementing this system, users will be easier to observe the conditions of the Cell Station and by receiving the information provided, the technicians will be able to keep the quality of the network in its best condition.

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