

## ANALISIS PENERAPAN PILKADA BERBASIS GLOBAL SYSTEM FOR MOBILE (GSM)

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**Abstrak:** Penelitian ini dilakukan untuk memudahkan pemantauan hasil calon kepala daerah dengan menerapkan aplikasi Sipitung dalam pemilihan kepala daerah serentak. Studi literatur, observasi, dan simulasi aplikasi dilakukan sebagai metode penelitian ini. Dengan cara ini, kita bisa mencegah terjadinya perpindahan suara di pilkada serentak secara real-time. Hasil dari penelitian ini berupa halaman lengkap informasi dan data komparatif untuk level set. Aplikasi ini sangat penting karena dapat memberikan informasi mengenai aplikasi sipitung. Penelitian ini menerapkan sistem informasi bagi pengguna aplikasi Sipitung untuk mengirimkan suara calon kepala daerah di setiap TPS.

**Kata kunci:** Pemilihan kepala daerah; GSM; system informasi; real-time;

**Abstract:** This research was conducted to facilitate monitoring of regional head candidates' results by implementing the Sipitung application in simultaneous regional head elections. Literature study, observation, and simulation of the application were conducted as the method of this research. With this method, we can prevent voting shifting in regional head elections simultaneously in real-time. The result of this research is a complete page of information and comparative data for the level set. The application of this application is very important because it can provide information on the Sipitung application. This research applies the system to be information for users of the Sipitung application to send candidates' votes for regional heads at each polling station.

**Keywords:** Regional heads selection; GSM; information system; real-time

### I. INTRODUCTION

Sipitung application is an application used as a tabulation of each regional head candidate's votes. This application is good for controlling the monitoring results in stages according to the facts at polling stations (TPS) since its accuracy is highly tested in the field [1]. The application contains data from the C1 Plenary form that can be displayed in this application. The TPS supervisor sends the data via SMS so that all TPS supervisors will each be coordinated from this application because those who have not sent it will be caught [2]. Today's information technology has changed the world's face from the real world to the cyber world [3].

The Sipitung application is designed to solve these problems using a simple and systematic concept with the automatic operator recap feature. This is the advantage of the Sipitung application compared to similar applications that still use operators to input and record the vote acquisition results on the application. This application helps the system to be more effective and efficient as expected [4].

The basic application of GSM-SMS technology also uses the BTS network as a connecting device. However, compared to the internet network media, GSM-SMS technology is much easier in delivering messages. With



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only one bar signal, SMS can be sent without a hitch than the internet data signal, which must be maximal. Therefore, this research was conducted to facilitate monitoring of regional head candidates' results by implementing the Sipitung application in simultaneous regional head elections. Literature study, observation, and simulation of the application were conducted as the method of this research.

## II. METHOD

This method is carried out using cell phones as a medium for sending messages/voting results at TPS with a special message format. Then, GSM / BTS operators as a means of connecting, then the Sipitung application as a system for decoding received messages [5]. The SMS technology was then developed into a connection with the MYSQL-based Sipitung application through the operator's BTS network. The Sipitung application runs on Windows OS 7,8,8.1,10, and Windows Server. Minimum Hardware Specs are Laptop / Pc Dual-Core Intel 1.3 MHz / AMD, 2GB Ram, 250GB Hard disk, and Standard GSM Modem [6].

## III. RESULTS AND DISCUSSION

Global System for Mobile (GSM) is digital cellular communication technology. GSM technology is widely applied to mobile communications, especially mobile phones. GSM technology is used in the Sipitung application to obtain accurate data [7]. The Sipitung application workflow, namely the SMS sender, will be connected to the operator's BTS network. The operator's SMS center will then be connected again to the SMS operator's BTS network, and the server will receive and store it.

First, to register a cellphone number, open the Sipitung application and enter the name of the supervisor, district, village / kel / pekon, and the TPS number, then save it. Make sure the cellphone number and data entered are correct. If you have registered, the system will register the cellphone number and ready for use [8]. Figure 1 explains the Sipitung topology. First, the incoming message signal or SMS message is sent [9]. After that, the modem as a signal will receive aid connected to the MYSQL database, then processed and reported with the Sipitung application [9].

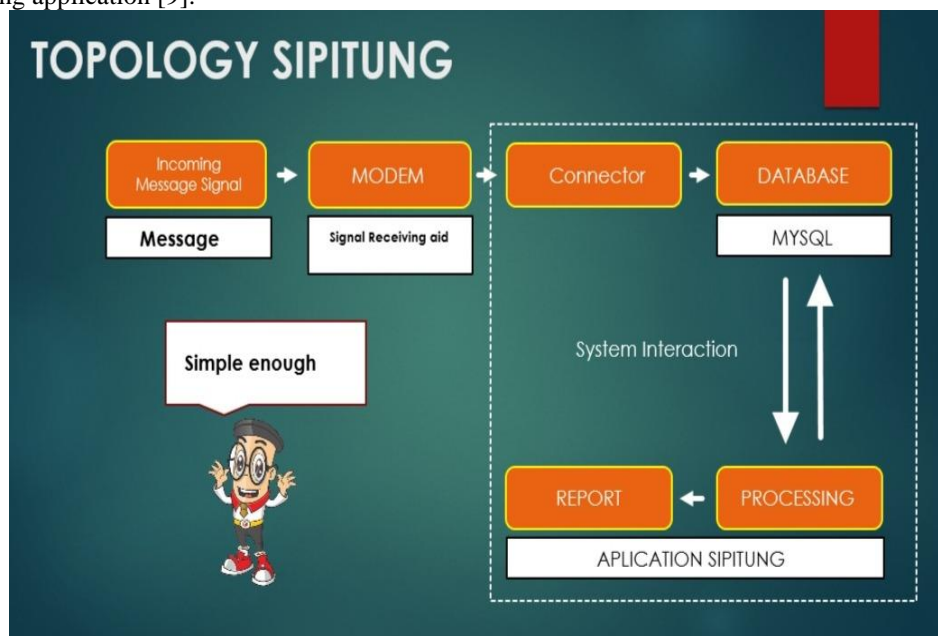
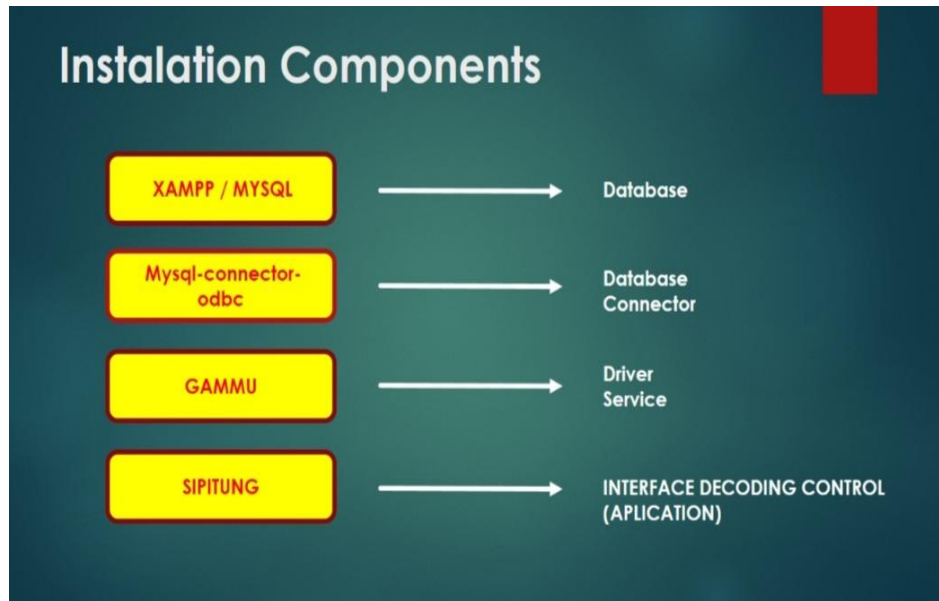


Figure 1. Topology of Sipitung

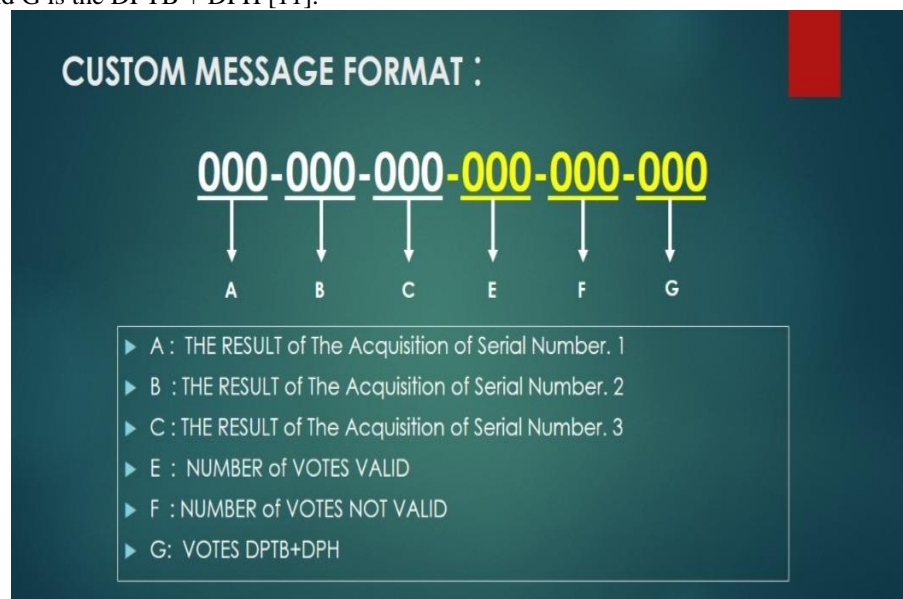
Figure 2 describes the installation component or installation process of the Sipitung application, first prepare XAMPP / MYSQL to store the database, then Mysql-connector-odbc as the database connector, GAMMU as the service drive, and then Sipitung as the decoding control interface [10].





**Figure 2.** Instalation Components

Figure 3 describes a special message format, which consists of A-G. A is the result of the acquisition of candidate number 1, B is the result of candidate number 2. C is the number of valid votes, F is the number of invalid votes, and G is the DPTB + DPH [11].



**Figure 3.** Custom Message Format

#### IV. CONCLUSION

With this Sipitung application, it will be easier for users to use the Sipitung application and produce fast and accurate data. The Sipitung application is designed to solve these problems using a simple and systematic concept with the automatic operator recap feature. This is the advantage of the Sipitung application compared to similar applications that still use operators to input and record the vote acquisition results on the application for users of the Sipitung application.

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