

## **ABSTRAK**

### **APLIKASI *POSITIONING CELL ID* PERANGKAT *MACHINE TO MACHINE* (M2M) PT. XL AXIATA, TBK BERBASIS *WEBSITE***

**Oleh**

**Agi Rezka Pantry**

Layanan *Machine to Machine* (M2M) merupakan layanan yang banyak dikembangkan dan disediakan oleh operator seluler. Layanan ini diperuntukan bagi kalangan bisnis guna mempermudah operasional bisnis dengan meminimalisasi campur tangan dari *user* atau pengguna.

Perangkat-perangkat M2M beroperasi secara otomatis melalui komunikasi antar perangkat dengan memanfaatkan jaringan *wireless*. *Positioning* pada perangkat M2M dapat dilakukan untuk keperluan fitur keamanan tambahan dengan memanfaatkan *Cell Global Identity* (CGI), yang terdiri dari *Mobile Country Code* (MCC), *Mobile Network Code* (MNC), *Location Area Code* (LAC), dan *Cell Identity* (*Cell ID*) dan *database longitude* dan *latitude* yang didapat melalui proses perhitungan triangulasi dari perangkat M2M dan tiga *Base Transceiver Station* (BTS) terdekat dari perangkat.

Aplikasi *positioning* perangkat M2M dibangun untuk menampilkan lokasi dari perangkat M2M pada aplikasi pemetaan *Google Maps* berdasarkan data *input* berupa MCC, MNC, *Region*, LAC, dan *Cell ID*.

Kata kunci: *Cell Global Identity* (CGI), *Mobile Country Code* (MCC), *Mobile Network Code* (MNC), *Location Area Code* (LAC), *Cell Identity* (*Cell ID*), *Positioning*, *Machine to Machine* (M2M).

## **ABSTRACT**

### **CELL ID POSITIONING APPLICATION FOR PT. XL AXIATA, TBK MACHINE TO MACHINE (M2M) DEVICE BASED ON WEBSITE**

**Oleh**

**Agi Rezka Pantry**

Cellular operators are being expand and provide Machine to Machine (M2M) Service. The M2M Service is provided for facilitating business operation, The M2M service also make user guidance even less.

The M2M devices can work automatically by using wireless network for communicating among devices. M2M devices positioning is needed to give additional security features by using database of *Cell Global Identity (CGI)*, *Mobile Country Code (MCC)*, *Mobile Network Code (MNC)*, *Location Area Code (LAC)*, *Cell Identity (Cell ID)*, and latitude and longitude of M2M devices. Latitude and longitude of M2M devices can be determined by using triangulation calculation between M2M devices and Base Transceiver Stations (BTS) that covering M2M devices.

The positioning application for M2M devices are developed to display the location of M2M devices into Google Maps application based on MCC, MNC, region, LAC, and Cell ID as input data.

**Keywords:** *Cell Global Identity (CGI)*, *Mobile Country Code (MCC)*, *Mobile Network Code (MNC)*, *Location Area Code (LAC)*, *Cell Identity (Cell ID)*, *Positioning*, *Machine to Machine (M2M)*.