

ABSTRACT

As more and more cellular operators developed in Indonesia, each operator creates unique and different promotion program that offers many interesting features and gimmicks to attract subscriber. One of many promotion plans is promotion that is related to tariff or famously known as "tariff war". Nonetheless, this so-called "cheap tariff" is only applied for any calls made between same operator. Unfortunately, PSTN subscribers cannot benefit from this kind of promotion. They are still obliged to pay the relatively high tariff. In this research we developed an application system that aimed to reduce the cost of PSTN subscribers, especially for the companies with high call traffic toward GSM numbers. This cellular gateway system consisted of several different mobile stations with different operators that were connected into several different clients through PBX. This system then decided the route which would be used to call the GSM number so that the call made was considered as an intra-operator call.

This issue arises from the fact that PSTN operators are still not able to compete against GSM operators concerning tariff policy in telecommunication market. By the existence with this system, it is hoped that PSTN subscribers, especially companies with high telephone usage can reduce their telephone bills.

In this research, the system successfully performed intra- GSM operator call by detecting the destination number. EMS DTMF decoder module was used at the beginning to detect DTMF signal, then continued with prefix number selection process to route the outgoing calls line. From 30 tests, we recorded that DTMF generation time was 5,14 seconds for 10 tones. The call handling reliability of the device was 98,3% (1 error in 60 tests).

Keywords: GSM, PSTN, tariff