

ABSTRACT

With the increasing development of telecommunication technology, Packet Switched Networks become more commonly used. In Packet Switched development, one problem that must be faced is the migration of circuit switched network to packet switched network along with it's effect on the currently existing 2G/3G networks and services. One of those existing services is the SMS (Short Message Service). SMS is mobile service used to send messages that is commonly used due to it's simplicity and ease of use, it's undeniable that the SMS will still be useful in the years to come. According to the 3GPP standard, a transition method has been specified called SMS over SGs, a hybrid method that allow an SMS transmission from it's CS infrastructure to the packet switched network. However, the main key component of migration from the circuit switched network to the packet switched network is the use of IMS (IP Multimedia Subsystem). IMS is an architectural framework for standarization of packet switched based services for mobile networks.

In this final project an analysis of the implementation of the SMS-Gateway, which is developed by Telkom R&D, was done to allow SMS service through the IMS network without the transition method or fallback to the 2G/3G network for the SMS service. The SMS Gateway use SIP protocols for sending packets between an SIP Client and a mobile phone device, where the SMS Gateway act as a connector between 2 different networks.

From the implementation, sending SMS between an SIP Client and the mobile phone is successful. The average delay of sending SMS during multiple scenarios such as during peak and non-peak time and also with multiple SIP clients is around 7 seconds, there's an extra delay in the connection between the SIP Client and the Gateway in the range of 0-1 seconds. The SMS Gateway has a limit of 254 characters per message sent. This system has a packet loss of 0.014%.

Keywords : SMS, IMS, SMS-Gateway, SIP Protocol