

## **ABSTRACT**

*As IP version 6 (IPv6) gains acceptance, there will be a period of transition during which host using IP version 4 (IPv4) will wish to establish session with host using IPv6 or vice versa. So also that happened at VoIP (Voice over Internet Protocol) application which have been enabled to work both of the IP version. From many conducive transition method between IPv6 and IPv4, the efficient method which suggested for that namely Protocol Translation method. That thing is based on excess and insufficiency from each protocol and also network reality which have been implemented at this time. In this final project, it was designed translator system called "Border Router" for VoIP application with SIP (Session Initiation Protocol) standard that covering subsystems, like NAT-PT (Network Address Translation - Protocol Translation) and ALG (Application Layer Gateway), that allow SIP User Agent IPv6 to call SIP User Agent IPv4 and vice versa, and also explain process that happened at both of host with the different protocol can communicate each other. Development of the SIP interconnection system is conducted without modifying software at each endpoint. So that investment which have been done to peripheral and past system (SIPv4 network) earn remain to be used properly.*