

## **ABSTRACT**

Almost whole IT Telkom laboratory (especially in Electro department) still use a manual security, which is door with key and door sell until this time. That condition has a high risk in security. The assistant laboratory's key can be duplicated easily and it could be given to others who have not the access to the laboratory or the key could be left and lost and it's found by others who have not access to the laboratory.

Because of that reason, we try to develop the security system for laboraroty's Electro Department of IT Telkom that would minimalise all the risks. Security system which is developed is security system using barcode reader and microcontroller through IP network. The advantage of this system is more secure than keypad. We use IP network because all laboratory have connected IP network and it is more cheap than SMS (Short Message Service).For identification, the input use barcode reader and keypad. If the input correct (match within database) than proximity sensor will open the door. Data with format date/time/assistant's will be store in logger. If the data is not correct then the alarm will on and alert data will be sent to monitoring PC.The output will display in LCD to show the read data from barcode reader and keypad. Data logging output has function to store identity assistant who is come in to laboratory. Data alert output has function to send message to monitoring PC that there is illegal activity come in to laboratory. Result of test, we know data from monitoring system are data access user and than if no access else mark red rectangular, and than if have access user else mark green rectangular, and than if proximity trouble else mark box flip –flop red white,ringing alarm. So that data tranfers via network IP to monitoring system. The success level of authentication process is 100%.

**Keyword : Barcode, Network Ip, Security System**