

## **ABSTRACT**

One of communication which is often to be used by users is SMS (Short Message Service), which the information is sent is text. But SMS is not the best choice to communicate safely. Most of users do not attend how very easy to steal the contents of message. Specification and base technology of SMS still have slots of security that cause SMS is not the secure way to communication.

This final project proposes a concept of security for SMS communication. That is encryption system SMS data planning which will be built the application is called XMS (Xecure Message Service). Encryption technique that is built is using AES algorithm and RC4 algorithm as the comparison. In this application is added PIN too for processing the encryption or decryption. Furthermore the system is tested with start the application which has been built to know the performances.

From the research which have been done, can be concluded that this application planning works properly. This thing is seen from the XMS application which has been built can encrypt the SMS data and send it in encrypted condition. In the other side, the SMS data which is received can be decrypted and can be known the real message. XMS application is secure because it can fulfill aspects of cryptograph security. The success encryption and decryption messages with AES algorithm is 100%. The success encryption and decryption messages with RC4 algorithm is between 10% - 40%, because it has obstacle at mobile phone in identification encrypted characters.

Keywords: Short Message Service, Xecure Message Service, AES Algorithm, RC4 Algorithm, PIN.