ABSTRACT

Digital data basically can be accessed by anyone at any time. However, because of this, there is an opportunity for private digital data, one of which is medical images that can be easily accessed by unauthorized people. Based on this reality, data privacy issues can be secured by using data encryption and decryption, there are various uses of encryption and decryption methods, one of which is using the RSA method and the RSA-CRT combination. RSA and RSA-CRT create several combinations of numbers that are used for encryption and decryption keys. This research conducted testing with image files with *.JPG format. The test results show that in the encryption and decryption process the RSA algorithm is faster than the RSA - CRT algorithm which has a longer process, therefore RSA is more efficient than RSA-CRT which has a longer processing time. Similarity test using MSE and PSNR on the original image with the decrypted image. The results of the MSE value on the RSA are close to 0, but not identical. This is because during the decryption process there are some image pixel values that do not return to their original values and PSNR > 30 dB means the image has similarities. While on RSA-CRT the MSE 0 and PSNR inf values, meaning that the original image with the decrypted image has identical characteristic tendencies so that the accuracy is better or does not cause changes in information.

Keyword: *medical image encryption, Image, RSA, RSA-CRT.*