

## **ABSTRACT**

This writing will be discussing a way to compare the performance elliptic curve digital signature algorithm and RSA. Digital signature scheme is a scheme that is one of the applications of cryptographic asymmetry used to simulate the security properties of a signature, only applied digitally, and RSA is a public key cryptosystem that is widely used for secure data transmission.

The objectives of this paper are to prove what kind of performance differences between Elliptic Curve Digital Signature Algorithm (ECDSA) and RSA, which one is more effective with smaller amount of data and time. The approach is to use digital signature combined with elliptic curve cryptography then it will be compared with the RSA. The proposed scheme has low time processing and data usage overhead as compared to existing RSA.

There are several phases to do the ECDSA and RSA algorithm. In ECDSA, the phases are key generation, signing, and verification. And for the RSA the phases are, key generation, encryption and signing, decryption and verification. This research evaluation is conducted through the result analysis by comparing the number of parameters computation generating key time, signing time, and verifying time using dataset from Shopee competition dataset. Researcher proved that ECDSA has more efficiency based on smaller data usage and time consuming process.

***Keywords---* Digital Signature, Elliptic Curve, ECDSA, RSA**