the study designed vehicle registration and authentication protocol to disable malicious access to vehicles. Also, by encrypting and transmitting V-$Message_{Code}$ and C-$Message_{Code}$, security on confidentiality was strengthened.

5 Conclusion

The study researched about reliable message communication technique in automotive environment utilizing cloud computing technology. The suggested protocol is an authentication protocol that registers vehicles to the Cloud Server to verify vehicle signature value and RSU. Based on the authentication value designed in authentication protocol, communication protocol was designed to strengthen security in messages. In performance evaluation, security was analyzed on representative security threats in automotive environment such as a tax on vehicle and RSU certification, attacks on message integrity, unauthorized access to vehicles, and attack techniques on confidentiality and availability.

In the future, through quantitative analysis on encryption and decryption, the efficiency of the suggested indication protocol will be increased and because cloud computing technology and automotive environment was converged, there needs to be research on countermeasures on new and variant security threats.

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