Abstract

Computing real-time road condition is really tough and it is not achieved using GPS. However, a malicious node can create multiple virtual identities for transmitting fake messages using different forged positions. A malicious vehicle can disseminate false traffic information in order to force other vehicles and vehicular authorities to take incorrect decisions. To overcome these difficulties we propose that vehicle should be authenticated by Trusted Authority (TA) via RSU, only then the navigation query sent to RSU through tamper proof device (in the Vehicle) for identifying best destination route. After authentication, TA generates a re-encryption key to requested vehicle for encrypting the query. Based on vehicle request, contacted RSU identifies the shortest path to reach the destination RSU by passing the vehicle request to neighbouring RSU’s. After identification of shortest path, it sends the encrypted message to requested vehicle using re-encryption key. Finally it decrypts the message using its own private key. Moreover, the network checks each vehicle speed for avoid accident based on predecessor and successor vehicle’s speed using chord algorithm. It also implementing priority based vehicle movement so, Network gives high priority in emergency vehicle, it gives medium priority for registered vehicle and it gives low priority for unregistered vehicle.
VANET-based Vehicle Tracking on Message Authentication and Secure Navigation Route

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Index Terms

Computer Science Networks

Keywords

DSRC protocol V2V communications V2I communications Traffic security MChord Message Authentication VANET Beaconing P2P network transmissions.