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GNSS based Smart Vehicle Security System

Ayesha Hasan[1], Maham Majid[2], Amir Zeb Shaikh[3], Mehwish Jawed[4], Momina Iftikhar[1]
[1]Telecommunication Engineer Karachi, Pakistan
[2]Assistant Business Manager, PTCL, Karachi, Pakistan
[3]Department of Electronics Engineering, NED UET, Karachi, Pakistan
[4]Department of Telecommunication Engineering, NED UET, Karachi, Pakistan
Corresponding Email: ayesha.hasan940@gmail.com

***Abstract*—Smart security systems are required to prevent vehicles from being stolen or manhandled. Furthermore sophisticated security systems are required to provide improved security to the user vehicles. In this paper a security system is proposed and implemented to provide improved security to vehicles. An Android application provides a graphical user interface (GUI) to users for independently communicating with the main security system. The major enhancement is the use of global navigation satellite system (GNSS) as the tracking technology instead of the conventional global positioning system (GPS). GNSS is the latest navigation technology aggregating all global navigation systems such as GPS, GLONASS (Global Navigation Satellite System), Galileo, BeiDou and QZSS. Additionally, it is also backed up by land and satellite based augmentation systems. By the integration of all these systems, a highly accurate, reliable and wide coverage system appears that is also superior with respect to anti-spoofing, anti-jamming, system failures and outages. Ignition locking can be initiated locally as well as remotely by the ignition lock system. By using the proposed system, owner of a vehicle can control, monitor and track his/her vehicle on his/her own mobile phone using an android application.**

***Keywords*— GPS, GNSS accuracy, Vehicle Tracking, Arduino, Android app, Ignition Locking**