
Security issues and challenges of Vehicular Ad Hoc Networks and their solutions

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Abstract One of the main priorities of many governments of the world is to define mechanisms and plans that could help to solve traffic problems and car accidents that modern society is facing. Recent improvements in the software, hardware and communication technologies, are empowering to design and implement multiple types of developed networks and deployed networks in different environments. In the past few years, vehicular ad hoc network has attracted much attention. Now, VANET due to the prospect of innovative and attractive, such as road safety, transport efficiency and intelligent transportation systems has attracted considerable attention to. Vehicular ad hoc network security is a major challenge that can effect on the applications and future developments. The safety of passengers and drivers and having reliable solutions for communication between the participants and accessing to authenticated and secure services is important. As a result, should be considered appropriate security architectures to provide secure communications between vehicles and access various services. Moreover, is needed to the appropriate security mechanisms for any vehicular ad hoc network environment with the aim of providing assurance, authentication, access control and access to secure services. In this thesis, we have discussed about the security challenges in the different areas of VANET, including security challenges in dissemination and routing, clustering, aggregation and authentication. And by analyzing a number of mechanisms and available security solutions and a comparison between some solutions and also introducing the pros and cons of some existing schemes, we have drawn a view of the efforts done in the area of security in VANET.

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