# QoS AND MOBILE TECHNOLOGIES

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# CHAPTER 16

# VEHICLE TO VEHICLE ROUTING PROTOCOLS

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## 16.1 INTRODUCTION

The success of VANETs involves around a number of key elements such as message routing from the mobile nodes (MNs) and the gateway to the Internet. Without an effective routing strategy, VANETs' success will continue to be limited. The issue remains on how to select the best route to reach to the destination which can be either an access point or another vehicle due to the dynamic nature of the VANET which causes frequent fragmentation of the network [1]. These fragmentations should not be noticed by the user. Therefore, in order for these fragmentations to be transparent, connection should be handed over to the next gateway before the current connection ends.

Thus, in order to perform this, the vehicle must know the list of existing gateways prior to hand to be able to communicate with them. The prior knowledge of number of gateways alongside the road brings extra overhead when the number of vehicles increased. Due to high broadcasting of the IP's the network will be flooded and congested [1]. The direct impacts of a broadcast storm are wasting of processing time and bandwidth and increased medium access delay. As it is well explained above that MANET routing protocols cannot be used direct to VANET scenario due to their inability to resist high topology change and speed of the nodes in network which frequency network disconnection. In this section first the discussion will be extended in order to know why MANET routing protocols are not suitable to be used in VANET scenarios, and lastly the existing routing protocols that are designed to be used in VANET will be reviewed.

## 16.2 INABILITY OF MANET ROUTING PROTOCOLS TO BE USED IN VANET

As MANET routing protocol can be divided in to topology based routing and position based routing. Before discussing the drawback of these protocols when applied in VANET, there is a need to give summary of main important concepts used in these protocols. The Table 16.1 shows the comparison of topology based routing and position based routing.