

Data Dissemination through Smart Traffic Lights for Accident Prevention

Hamayoun Shahwani
*Department of Telecommunication,
Faculty of ICT, BUITEMS*
Quetta, Pakistan
hamayoun.yousaf@buitms.edu.pk
0000-0003-2211-8360

Muhammad Umar Chaudhry
*Department of Computer Science,
MNS-University of Agriculture,
Multan, Pakistan*
umar.chaudhry@mnsuam.edu.pk
0000-0002-7287-2372

Jawad Yousaf Department of
*Electrical, Computer and Biomedical
Engineering,*
Abu Dhabi University,
United Arab Emirates
jawad.yousaf@adu.ac.ae
0000-0002-7937-3007

Nokhaiz Tariq Khan
*Faculty of Business and Management,,
Information Technology University,*
Lahore, Pakistan
nokhaiz.tariq@itu.edu.pk
0000-0003-0693-1490

Abstract— Traffic accidents mostly at junctions are escalating as the traffic in urban areas is increasing. Due to enormous number of mishaps at junctions, there is an extensive need of a method to minimize the mishaps around the junction areas. This paper presents a method of smart traffic signalling along with an effective data dissemination that informs the vehicles to stop, accelerate or decelerate near the junction, to minimize the overall mishap rate. The proposed method allows the traffic light controller to control the timing of traffic lights in the emergency situations and also effectively disseminate the data to the vehicles moving towards the junction informing them about the condition of the junction. The proposed algorithm shows a much better performance than the conventional traffic light control system.

Keywords— VANET, V2V, data dissemination, traffic light controlle