Proceedings of the 10th National Technical Seminar on Underwater System Technology 2018

NUSYS'18

Editors: **Md Zain**, Z., **Ahmad**, H., **Pebrianti**, d., **Mustafa**, M., **Abdullah**, N.R.H., **Samad**, R., **Mat Noh**, M. (Eds.)

Contents

Inter Vehicle Communication System for Collision Avoidance

Nurul H. Noordin, Althea C. Y. Hui, Nurulfadzilah Hassan and Rosdiyana Samad

Abstract In inter vehicle communication, there are many aspects that must be taken into considerations. The utmost important aspect is the speed of sending data packet, which is the key factor in preventing emergency message delay in traffic network. Other than that, the accuracy in reading and processing sensors' data by microcontroller are essential in cases of collisions avoidance. The aim of this paper is to overcome the communication problems between vehicles located at intersection. In this paper, two conditions have been proposed: vehicle-to-vehicle (V2V) communication and vehicle-to-infrastructure (V2I) communication. Experiments have been conducted using prototype cars. The results show that the prototype cars are able to avoid collision through activation of communication system at certain section on the road.

Keywords Inter-vehicle communication system · Vehicle-to-vehicle (V2V) Vehicle-to-infrastructure

1 Introduction

Accident at intersections has been reported as one of the major cause of fatal accidents involving vehicles on the roads [1]. Most cases were caused by vehicle blind spots. Motorcyclists squeezing in between vehicles can be dangerous as they may be in blind spot area of other vehicles and ends up in an accident [2].

There are several accidents happened at the intersection University Malaysia Pahang (UMP), Gambang Campus, since 2010. Recently, there are few fatal accidents reported, involving UMP students at intersections in the campus. Accidents often occur at the intersection without traffic lights. However, accidents can be prevented, if there is some form of communication between vehicles, crossing inter-