Evaluation of road safety performances in urban areas

S. Raicu, D. Costescu, S. Burciu
University Politehnica of Bucharest, Romania.

Abstract

The state of road accident in Romania, especially in urban areas, underlines the needs of research on identifying the appropriate measures for road safety enhancement. In this paper we present results of research on road safety specific for urban area and peculiar to Bucharest City. The first part of the paper describes the structure of the model developed for evaluation of road safety performances in urban areas for different traffic intensity patterns. The initial level of modelling includes procedures for representation of the macroscopic urban road network starting from the representation of the digital urban area with junctions and street sections classified according to their capacity and functionality. The second level of the model contains functions for estimating the safety performance of urban transport network. Each category of elements with low safety performance is analysed taking into account the physical network characteristics, the traffic flow intensity and accidents statistics. The second part of the paper presents the definition and calibration of safety performance function for sections of urban road network from Bucharest. The set of defined safety performance functions will be a useful tool for identifying the possible solutions and measures for safety enhancement.

Keywords: urban road safety, safety performance function, urban transport network modelling