Krimmling, Jürgen „Priority for Public Transportation Vehicles“

As an introductory remark, digitalization and its opportunities for as well as impact on traffic is addressed.

The prioritization of public transport at traffic light systems (TLS) represents one aspect of digitalization. Prioritization may be given in an absolute or relative way. Both these options will be explained briefly.

The second part of the presentation is dedicated to the technical realization of the prioritization of public transport. Here, the so-called beacon-radio transmission principle is the common way of the public transport logon. There, localization and logon functions of infrared beacons to the vehicles are transmitted. The actual logon to the TLS is done via radio data transmission, where pre-logon, main logon, door closing signal and log off are distinguished. For cooperatively controlled TLS, the vehicle to infrastructure (C2I) communication is increasingly employed. Pivotal applicable messages to the public transport-speed up messages are introduced.

A special application for the public transport prioritization is realized for the city of Dresden prototypically. There, a traffic lights control to the required quality in connection with a driver advisory system for energy-efficient driving is employed. Prerequisite for this is a data-related connection of the public transport control center and the traffic management system.

The basic idea of the traffic lights control to the required quality is to calculate for each individual transport vehicle the prioritization in dependence on the timetable situation, possible interconnections, possible filter-in processes into jointly used route sections as well as dependence on the motorized individual transport. The thus calculated prioritization is then realized at the control unit. The required velocity for passing the TLS is indicated to the driver via a driver advisory system.

This very system has been applied at 20 TLS in Dresden successfully since 2016. Aside from the reduction of the driving time according to the timetable on 2 lines by 3 min each, the reduction of the traction energy consumption and the increase of the driving comfort represent major results.

As an outlook, a project for automated public transport is referred to. This project, taken up in December 2018 has the objective to realize an automated bus shuttle operation in the North of Leipzig.