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Titel des Beitrags: Simulation-based Performance Test of Incident Detection Algorithms Using Bluetooth Measurements

Abstract: This article analyzes the use of Bluetooth-based travel times, for Automatic Incident Detection (AID) purposes. Automatic incident messages were derived for simulated data through the use of an AID algorithm, which was developed by Technical University of Munich (TUM). A Vissim model of a 15 kilometre section of A9 motorway in Germany was set up, where different scenarios of traffic situation, incidents and detector layout were introduced and travel times were generated, processed and then run through the TUM algorithm. The performance measures Detection Rate (DR), False Alarm Rate (FAR) and Mean Time To Detect (MTTD) were used for the analysis of the incident messages’ quality of the simulated data and compared for every incident scenario. Local data were also generated in the Vissim model and used by VKDiff algorithm for incident detection. A comparison of the quality of the incident messages of both TUM and VKDiff algorithm was conducted.

Stichworte: Simulation; Traffic incident; Automatic Incident Detection; Bluetooth; Incident scenarios; Detector layout

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