INTRODUCING A SIMPLE SEMI-AUTOMATED METHOD FOR PAVEMENT SURFACE CONDITION EVALUATION

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ABSTRACT
Pavement condition data is the main part of a Pavement Management System (PMS). Accurate and fast pavement condition evaluation data gathering helps the PMS to schedule the maintenance and rehabilitation activities effectively. In this paper, a new simple method is presented for evaluating the pavement surface condition. This method involves two main steps: continuously taking pictures from the road surface by a professional camera carried on an ordinary vehicle travelling in traffic stream at a constant angle and then analyzing pictures in order to determine surface defects for each section of the road. A GPS receiver is used to collect the geographical coordinates of pavement sections from which the pictures were taken, and this data is used to produce GIS-based pavement condition reports. To measure the dimensions of defects, a dummy mesh system is proposed. Utilizing this semi-automated method for data collection for pavement evaluation guarantees safety of the operation team and reduces traffic interruptions, moreover, it results in precise and repeatable data. Distress evaluation data from a small network is used to validate the accuracy and appropriateness of this method in comparison with ordinary conventional manual data survey methods. Since the picture analysis, measurements, and data extraction procedures take place in the office, the presented method will have a very good repeatability and data accuracy. Furthermore, this method is quite inexpensive in comparison with similar pavement evaluation methods.

KEY WORDS: Pavement Surface Condition, Semi-Automated, PCI.