



GPR used in combination with other NDT methods for assessing pavements in PPP projects

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In the recent decades, Public-Private Partnerships (PPP) has been adopted for highway infrastructure procurement in many countries. PPP projects typically take the form of a section of highway and connecting roadways which are to be constructed and managed for a given concession period. Over the course of the highway concession period, the private agency takes over the pavement maintenance and rehabilitation duties. On this purpose, it is critical to find the most cost effective way to maintain the infrastructure in compliance with the agreed upon performance measures and a Pavement Management Systems (PMS) is critical to the success of this process.

For the prosperous operation of a PMS it is necessary to have appropriate procedures for pavement monitoring and evaluation, which is important in many areas of pavement engineering. Non Destructive Testing (NDT) has played a major role in pavement condition monitoring, assessments and evaluation accomplishing continuous and quick collection of pavement data. The analysis of this data can lead to indicators related to trigger values (criteria) that define the pavement condition based on which the pavement "health" is perceived helping decide whether there is the need or not to intervene in the pavement. The accomplished perception appoints required management activities for preserving pavements in favor not only of the involved highway/road agencies but also of users' service.

Amongst NDT methods Ground Penetrating Radar (GPR) seems to be a very powerful tool, as it provides a range of condition and construction pavement information. It can support effectively the implementation of PMS activities in the framework of pavement monitoring and evaluation. Given that, the present work aims to the development and adaptation of a protocol for the use of GPR in combination with other NDT methods, such as Falling Weight Deflectometer (FWD), for assessing pavements in PPP projects. It is based on the experience of Laboratory of Pavement Engineering of National Technical University of Athens (NTUA) gained through its research activities in various Greek PPP projects as well its involvement in several related European and International scientific actions. It is suggested that the implementation of such protocol could support the pavement management activities with respect to the needs of a PPP project. This is accomplished through the resulted advantages that include simplicity in application, economic benefits and familiarity that are very important factors towards the optimization of the resources and the utilization of the available information; both of them are required for the orderly operation of a PPP project.

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