INVESTIGATING THE APPLICATION OF GROUND PENETRATING RADAR IN BRIDGE CONDITION ASSESSMENT

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The outcomes of bridge inspection are represented by condition rate. Condition rate means the comparison between current conditions and as-built conditions. Generally, condition rating uses some range of numbers that expresses the qualitative condition such as: excellent, good, fair and poor. Bridge Management Systems (BMSs)such asNational Bridge Inventory (NBI) utilize the range of 0 to 100 for bridge condition assessmentin which zero means failed condition and 100 means excellent condition .Ground penetrating Radar (GPR) is an electromagnetic evaluation technique which is used in some infrastructures for different purposes such as: concrete evaluation, geology, archeology and utility detection, but the most important application of GPR technologynowadays is for structural conditionevaluation of reinforced concrete bridge deck. Therefore,the interpretation of GPR images is one of the most important parts of bridge condition assessment because the final result and decisionis made based on interpretation of GPR images. Basically,GPR data are interpreted by numerical analysis and visualization technique that each of them has some strengths and weaknesses. This paperpresents an overview of GPR applications in bridge deck condition assessment.

Keywords- Condition assessment, Bridge Management System,GPR