



The Benefit of Integrated Analysis of GPR Data Together with Other Road Survey Data

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Ground Penetrating Radar (GPR) technique has been used in different kinds of road survey applications since early 1980's. The problem, however, has been that its use has been substantially varying from country to country. For instance in Finland GPR is a routine tool in every road surveys and construction project, but in Sweden it is used more frequently only in Northern Sweden. One reason for that has been the complexity of the GPR data to pavement engineers.

Authors have found already in early 1990's that this problem can be solved by presenting GPR data and its results together with other NDT data, such as Falling Weight Deflectometer (FWD) and Profilometer data, that engineers are used to read. Also visual data, such as digital video from the road and its surroundings, help pavement engineers to not only understand the data better but also use it optimally in their design projects.

In recent years other new technologies have entered to the road survey market, the most promising new ones have been high precision thermal cameras and laser scanner technique. These techniques have now been also successfully tested in different kinds of road and bridge projects in Finland and in Sweden.

However other NDT survey results do not only provide better information for reliable GPR based road diagnostics but they can help personnel working with GPR to make better quality interpretation. A good example for this is the use of back calculated or forward calculated pavement moduli information to verify the correct GPR thickness calculation.

This presentation will provide an overview about 20 year's experiences of the integrated analysis of GPR data together with other road and bridge survey data. Case histories will be presented and discussion will be made about the advantages and bottlenecks of these analysis methods.