REAL-TIME PAVEMENT PROFILE SENSING SYSTEM USING AIR-COUPLED SURFACE WAVE

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Description

Currently, many nondestructive mechanisms such as SASW (spectral analysis of surface wave) and MASW (multichannel analysis of surface wave) for detection of subsurface pavement profiles have been used. However, these approaches are associated with possible limitations such as detection limited only to point tests (moving test not feasible), slow assessment and analysis, and absence of real-time profile generation. **This novel sensing system enables generation of payment profile on real-time basis using air coupled surface waves.**

Value Proposition

The system:

- Overcomes the requirement of physical contact with pavement surface, as observed with prior art techniques
- Effectively works even with walking or slow driving speed
- Identifies subsurface payment profiles instantly and on a continuous basis
- Is suitable for thorough inspection of entire pavement length
- Comprises an innovative fast dispersion analysis algorithm to effectively assess/identify the debonding or deterioration of pavement layers
- Further comprises a microphone array for detection of leaky surface waves generated from periodical impacts at the pavement surface, as compared to an accelerometer used in prior art techniques
- Would be commercially useful for pavement inspection and evaluation by highway construction contractors, highway maintenance contractors, airport pavement contractors, government officers, and university researchers

Intellectual Property Status

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License Status

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