Driving innovation for an ever changing world.

RAV – Road Assessment Vehicle Surveys

Road Assessment Vehicles (RAVs) carry out high speed data acquisition and recording of surface conditions, including automatic recognition of surface cracking.

W.D.M. Limited has been undertaking high speed data acquisition surveys since the late 1980's and has been using RAVs, which include the automatic measurement of cracking, since 2000.

These vehicles have been the primary provider of SCANNER survey data throughout the United Kingdom.

The vehicles are designed to survey at speeds up to 100 km/hr while measuring and recording:-

- roughness in the left-hand wheel-path
- texture in the left-hand wheel-path centre of lane and right hand wheel-path;
- individual wheel-path rut depths measured under a 2m straight edge with 20 sensors over a 3.2 metre width;
- transverse profile edge defects;
- video record of the view ahead providing images at 5m intervals;
- longitudinal gradient, horizontal radius of curvature, lane crossfall;
- differentially corrected GPS co-ordinates corrected to OSGR's.

The RAV is independently accredited annually by TRL and its geometric system is certified to have a minimum operational speed of 0.5km/h, which is particularly significant when operating in an urban environment.

The addition of automatic crack recognition enables the RAVs to completely replace manual visual surveys with objective and more repeatable measurements, obtained in greater safety from a vehicle travelling at normal road speeds. The surface defects measured and recorded define the latest UK National Indicators for principal and classified roads.

When input into a PMS they can be used to define maintenance schemes and place the work in priority order. The measurements of alignment together with the video record provide an ideal way of defining site categories for use with surveys of skid resistance.

Two measures identified from the SCANNER research in the UK have been added to the output from the RAVs. These measure edge deterioration and transverse roughness, which it is expected will provide further indicators of conditions on narrow, particularly lower category roads where conventional ruts do not develop, but the road surface becomes deformed.

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