Greenwood Profiler

GREENWOOD ENGINEERING

Greenwood Profiler gives both transverse and longitudinal profile, and allows them to be combined in one 3D profile.

Greenwood Profiler optimizes management of pavement maintenance, and is used by road authorities and national road research institutes for pavement condition surveys.

Greenwood Profiler uses high precision sensors and digital data acquisition for highest possible result quality.

Greenwood Profiler can be operated as a standalone system or part of a multifunction vehicle.

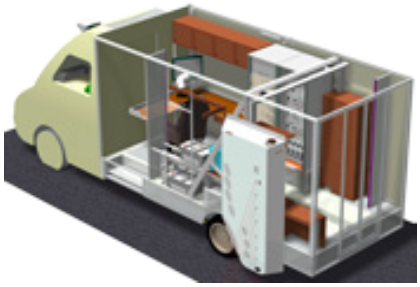
Greenwood Profiler is configurable to meet many different requirements.

Greenwood Profiler can be synchronized with GPS and other measurement systems like LineScan and Right-of-Way Imaging.

A unique possibility for measurements in city regions with many stops and low speed restrictions is to combine a ***Greenwood Profiler*** (inertial profiler) with a ***Greenwood HRM*** (Highway Road Monitor geometrical profiler). The ***Greenwood HRM*** can provide one longitudinal profile that is totally independent of velocity, the accuracy of the HRM- profile is best when travelling on a straight line (no curves), because the method is based on measuring several times on the same spot on the pavement. Both as none contact devices.

Technical Description

An odometer is mounted on the wheel of the vehicle and in combination with the inertial system. It keeps precise track of the vehicle movement. Each laser provides a longitudinal roughness profile (IRI) and contributes with one point to the transverse profile. The lasers can be upgraded to texture lasers (64 kHz) that also measures the texture profile (MPD).



The ***Greenwood Profiler*** data acquisition software consists of a real-time calculation module capable of capturing and handling output from all sensors and instruments.

The ***Greenwood Profiler*** is delivered with a high performance computer with Ethernet network and modular subsystems, which can be plugged-in and synchronized. A multifunctional solution is operated from a keyboard connected to a rack mounted PC, which controls the data acquisition and subsystems.

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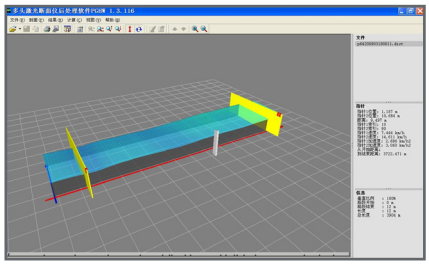

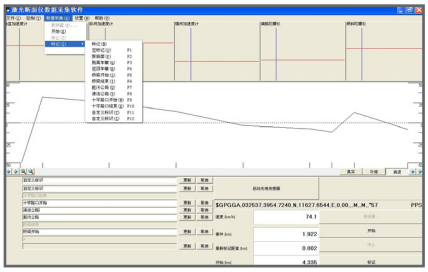

Greenwood Profiler Software

A software package with data acquisition software and post processing software is provided. The stored raw data can be processed post mission in the software program “Profilograph for Windows”.

The processing of data can be in automatic batch mode or in particular sessions in manual mode. The operator selects the interval of wavelength in which the pavement surface profiles should be reported. The combination of profile data, data from the inertial sensors and GPS data provides a full 3D profile of the road geometry, such as cross fall, longitudinal slope, curvature and coordinates.

The post processing software displays longitudinal profiles (surface plots) or transverse profiles on screen and generates result files in ASCII format or in Excel format, which is easy to import in external software for further analysis or formatting.

The data acquisition and post processing software handle DGPS information and report information connecting results, time and position. (The GPS NMEA format is standard.) Any relevant algorithm for pavement characteristics can be added. Custom designed filters to obtain national characteristics or indices can easily be built into the modular post processing software.

Other Features

- The equipment is able to measure pavement profiles at all traffic speeds.
- Utilizes new digital Greenwood Engineering data collection system.
- Web interface for easy configuration and calibration.
- Meets requirements of an ASTM E950 Class 1 profiling device.
- Automatic stop-and-go filter.
- Customizable configurations for best solution for each customer.
- Under normal configurations maximum speeds can exceed 150 Km/h.
- GPS and texture sensors for collection of more information of the road.
- The system can operate on any dry pavement surface.
- The user can export values from each individual sensor and test his own algorithms.
- Can be fully integrated with: ***Greenwood ROW*** Right-of-Way Imaging
  Greenwood SIS Surface Imaging System
  Greenwood GPS systems.

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