



**RAMBOLL**

## ROAD SURFACE MEASUREMENT

Since the beginning of 1980s, the Laser RST has set the standard for speed independent road condition surveys based on laser technology. Road surveys using Laser RST has been a foundation for cost efficient road management.

### The importance of a good infrastructure

Our roads and road network represent billion investments. The default on The roads are of great importance to the country economic development. The roads must provide high security for a long time, accessibility and comfort for its road users. To meet the requirements the road keeper needs to have a true picture of the status of the roads and be able to judge how they change over time.

### Users

Measurement data from Laser RST is used except by the Swedish Transport Administration, and a host of other road authorities in the world, by the entrepreneurs within the pavement industry.

Measurements with Laser RST do that possible to get the greatest possible benefit of the money set aside for road maintenance.

### Data collection

Laser RST measures at normal traffic speed and provides objective and

traffic-safe results measurements that provide a quick check of existing condition and follow-up of implemented measures.

Measurements with Laser RST give a three-dimensional image of the road surface. In recent years, the technology has moved from measure the road surface using a number (11-37 pcs on max 3.6m width) in parallel positioned point lasers, to now be measured with a scanning laser system that provides significantly more measuring points across the road (4000 points on 4m width). With this information is then calculated a number parameters to describe the road's conditions and properties.

Examples of calculated parameters are:

- The geometry of the road (such as crossfall, hilliness and curvature)
- Unevenness along the road (such as length profile, and IRI)
- Unevenness across the road (such as track depth and theoretical water depth for hydroplaning)
- Road surface texture (such as MPD/rough and RMS/fine). Surface defects that crack, potholes, rockfalls, etc

The collected data is georeferenced using GNSS + inertial navigation, which provides stable positioning even in areas with difficult conditions for GNSS measurement (e.g. in tree corridors, in tunnels or among tall buildings in an urban environment) When measuring, images of the road area are also collected. The images provide good information about the surrounding terrain, such as road width, ditching, drainage, and banking. Also signs, railings and light poles can be examined and positioned in the images.

If necessary, we also collect mobile mapping data in the form of laser point clouds of the entire road area, which enables the production of a digital twin with the aim of inventorying, mapping, modeling and visualizing the road area.

### CONTACT

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