# GPS-video and visual road inventorys
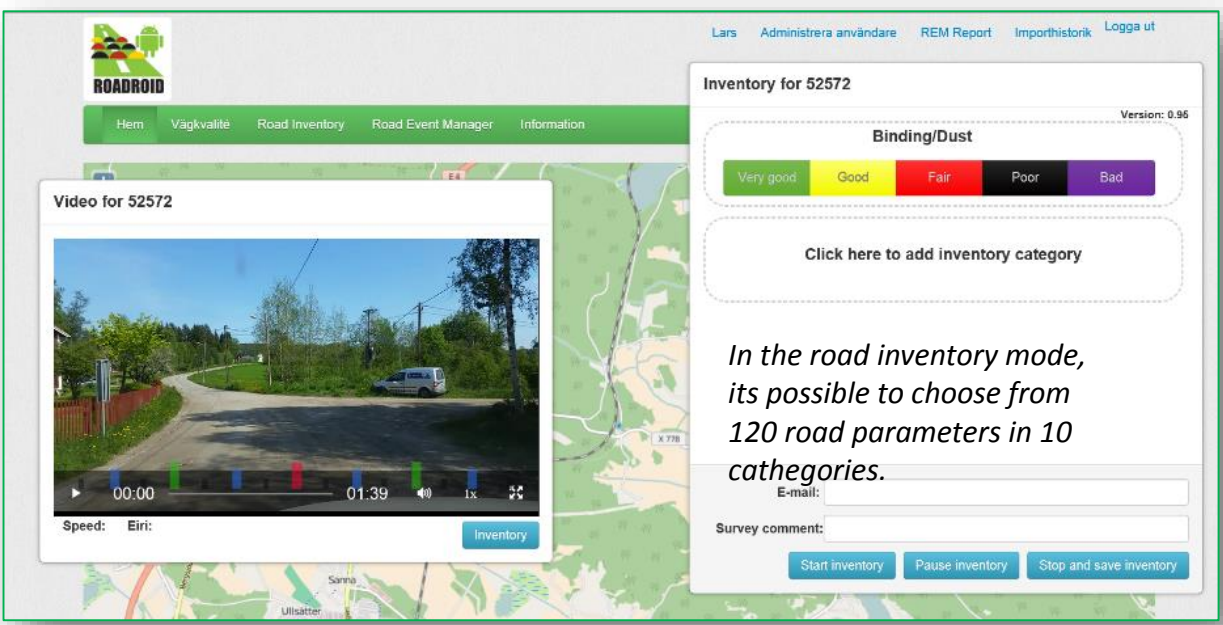
- Important to mount phone with camera lens unobstructed (clear view).
- Video quality is HD 720p and 30 FPS - with or without sound.
- While playing video - a marker is moving on map to show location.

# Roadroid

- Smartphone app for Road Surveys
- Road Data Management System

V2PRO

App measures vibrations with internal accelerometer and capture photos/videos with GPS.coordinates.

Data is uploaded to a cloud service after survey, when you have a connection.

Result from the visual road inventory is saved back to the system and can be viewed in a road inventory view. This view have the possibility to plot the result on the map background – and you can also extract in preferred segment lengths for import in your assets management system.

In the road inventory mode, its possible to choose from 120 road parameters in 10 cathegories.
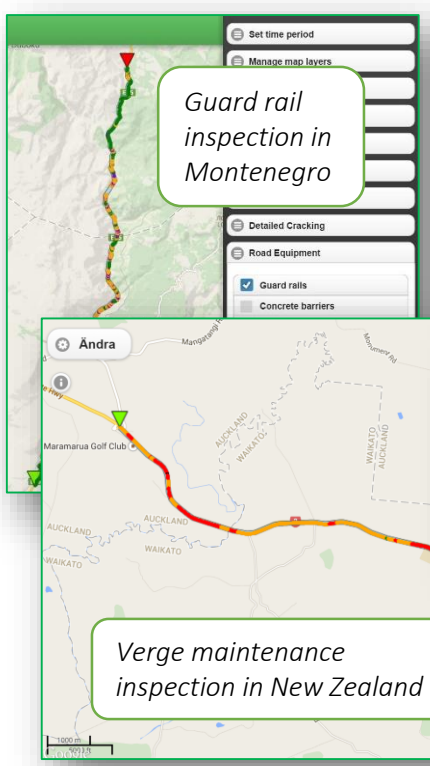
Guard rail inspection in Montenegro

Verge maintenance inspection in New Zealand

*The Roadroid offer:*

Two months free evaluation period
Pricing is after evaluation is dependent on:
- How many units/phones you will use
- How long time you bind/commit to use them.

Free to use for universities in research and training!

*Contact:*

Lars Forslof:

Email:
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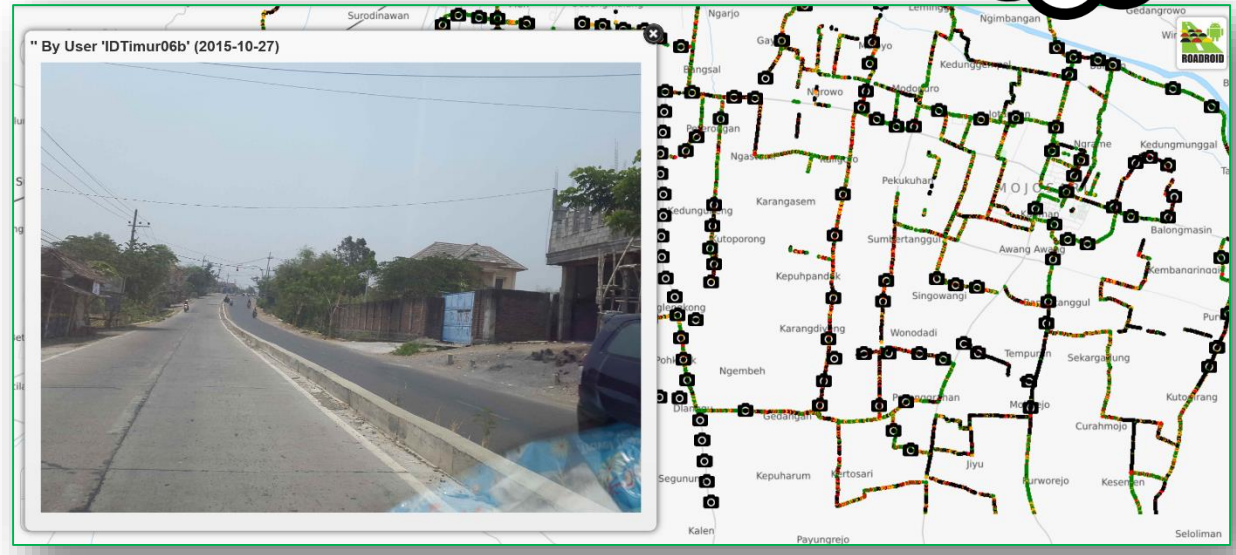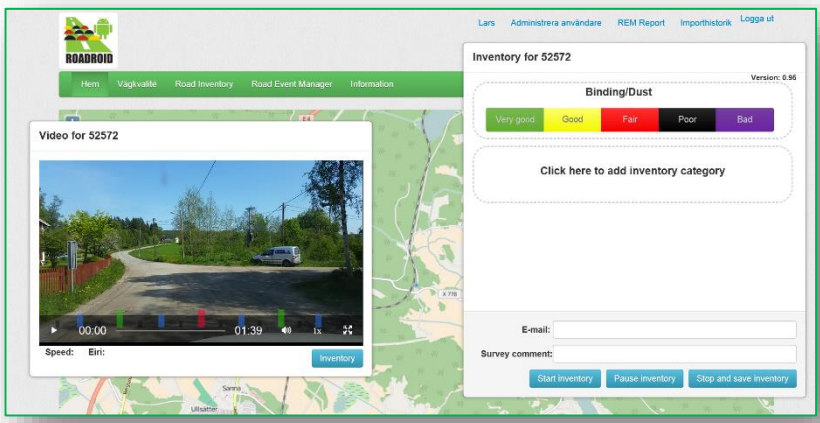
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Road Data Management System:
- Show survey data on map
- Show photos/videos on map
- Extract data in sections to plot charts in MS Excel.
- Extract data to Shape/KML format for use in GIS-tools.

From the **GPS videos**, you can make visual **Road Inventorys** .

# Smart phone app for road surveys

- Analyse car body vibrations in 100-200 Hz
- Calculates two IRI values and GPS-data
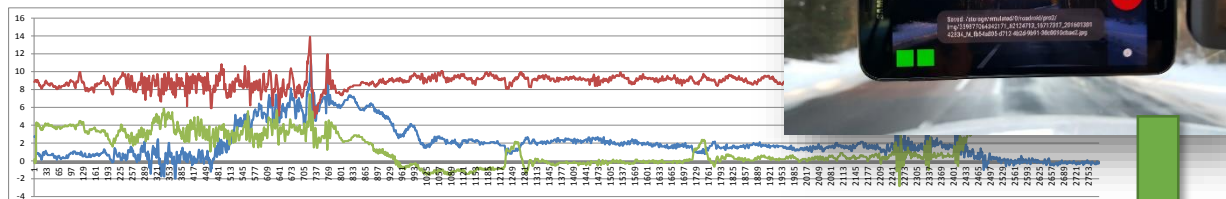


**Possible settings**

- Three car types (Small car - Medium/large – 4WD typ Hilux)
- Phone type - adjusts the sensitvity for an estimated IRI (eIRI)
- Sensitivity and segment length for a calculated IRI (cIRI)

**Accuracy**

Roadroid is a response type survey system. It is according to the world banks Information Quality Level 3 (IQL3). A laser survey vehicle is IQL1.
IQL3 gives about 80% accuracy in comparison to IQL1.

*You can calibrate the system to an known IRI for a section!*
*Its possible to get correlation R2 up to 0,8 - with correct tuning and speed.*

Survey speed is important for a good correlation. The best correlation to IRI is achieved in 70-80 km/h. Two IRI values are calculated:

Estimated IRI
- linear formula with a new calculation each second
- have a speed compensator for paved roads
- is sensitive for rough macro textures
- is calculated from the quarter car formula

Calculated IRI
- sensitivity need to be set for a certain vehicle and survey speed
- calculates vertical changes over a length and use a smoothering filter
- calculation segment lengt can be set from 20 m - 200 m, depending on type of roads and lenght of sections.

*IMPORTANT: Collect data to the appropriate level of decision you are making!*
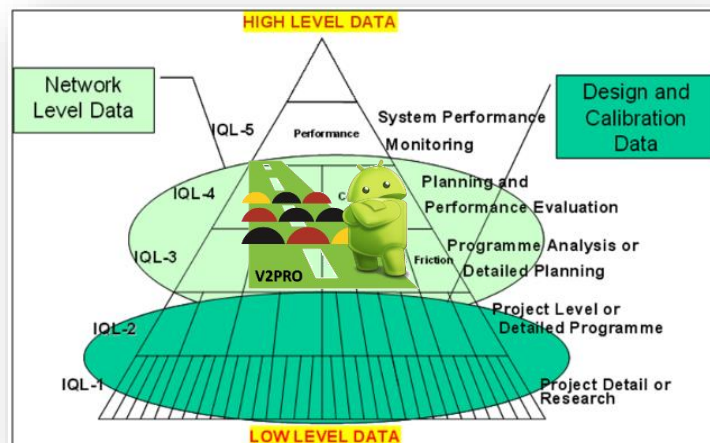
# Road Data Management System (RDMS)

- Data is uploaded to internet where you have a good connection
- Survey data is small size and can easily be uploaded with 3G/4G
- Photo/Video files are large and should be uploaded on a good WiFi
- The RDMS have a user account with certain units (IMEIs) connected to it
- Each start/stop in app is imported as a survey file to the system



From the import history it is possible to
- View survey file details
- Show the specific survey on map
- Export Shape or KML files
- Aggregate survey in preferred section lengths



*Roughness and survey speed can be shown in different layers on the map.*

*The system is easy to use and illustrative!*