ROADSCANNERS

ROADSCANNERS
Product Catalog

BEYOND
THE
SURFACE

Road Doctor® Survey Van

The Road Clinic

RDSV offers a complete non-destructive survey system designed for road condition data collection and analysis.

RDSV unites the unique and innovative Road Doctor® survey packages in a single affordable easy to use plug and play high tech system.

RDSV hardware system packages can also be purpose-built to fit your requirements.

Road Doctor® Survey Van Benefits

High quality multi-faceted non-destructive data collection in a single pass

Major savings on traffic infrastructure management

Savings as high as 40 % on infrastructure costs

Focused maintenance planning

Increased lifetime of roads and railways

Combining surface and subsurface information

Better understanding of the structure under investigation

Latest software for data analysis and storage

GPS positioning for every survey is saved making surveys repeatable, comparable and locatable

Selected high quality components

Get your own RDSV!

To get your own a complete high tech system for road condition survey and analysis Roadscanners offers three options:

1. Order a brand new fully equipped vehicle.
2. Ship your own vehicle to Finland and we will install the system here.
3. Install the system yourself and one of our engineers can come and finalize the installation and at the same time provide training to your staff.

The following plug and play survey system packages and corresponding Road Doctor® 3 software and modules are the main options:

Road Doctor® CamLink (RDCL)

Central system for the RDSV – all the other packages include RDCL which is a system for capturing videos linked to GPS data. Includes a tool for logging pavement damage.

Road Doctor® Laser Scanner (RDLS)

A system for cost effective laser scanning and laser scanner data based analysis of roads and railways. The system also includes a 3D accelerometer which enables road roughness surveys.

Ground Penetrating Radar (GPR)

Along with structure thickness and quality, GPR systems provide detailed information concerning structural anomalies and other important factors like the moisture content.

Road Doctor® Thermal Diagnostics (RDTD)

A system designed especially for IR investigations of traffic infrastructure.

Road Doctor® CamLink Package

RDCL package offers an innovative plug and play survey system for capturing multiple videos linked with GPS coordinates and other survey data. All data collection devices are controlled in the Road Doctor CamLink interface. Capture with all the devices (Laser Scanner, 3D Accelerometer and Thermal Camera) is started with a single button in the RDCL interface.

RDCL package includes all the necessary hardware components and the latest Road Doctor® 3 software. The RDCL package is a complete tool for infrastructure data collection, analysis and reporting.

RDCL package contains a rugged roof mounted enclosure for the camera(s). The system is designed to handle poor weather conditions and challenging environments.

RDCL Components

- CamLink Camera Enclosure
- GigE Connected Industrial Camera
- High Quality IMU Capable GPS
- Distance Measurement Instrument, DMI
- Modified Industrial Computer
- Touch Screen Monitor
- Transit and Storage Case
- Mounting System
- Microphone
- Road Doctor Software Products

RDCL Video Advantages

- Ready-to-use system
- Up to 3 cameras can be used simultaneously
- Multiple video capture linked with GPS data
- Integration of other survey data possible
- User friendly software interface

CamLink Camera Enclosure

RDCL Inventory Advantages

- Make pavement distress, road furniture or drainage inventories
- Definition of up to 10 parameters into 4 classifications
- Inventory/classification can utilize continuous inputs (e.g drainage, cracking) or point-like designations (e.g. culverts)
- Outputs can be made at different user set intervals (e.g. 10 m, 100 m)
- With RDCL, inventory can be done in the field during data collection or back at the office using HD video

Road Doctor® Laser Scanner Package

RDLS package offers cost effective laser scanning, roughness and visual pavement distress surveys and integrated data analysis of roads and streets.

RDLS is comprised of Roadscanners' Road Doctor® CamLink system along with integrated laser scanner and 3D accelerometer. RDLS system facilitates modelling of the road surface and its surroundings.

The RD surface analysis module is used to process and transfer data from the RDSV Laser Scanner and accelerometer.

The RD surface analysis module can be used to combine and analyse all of the collected data in a single view. RD software is utilised to prepare maps, statistics and maintenance plans based on the diagnostics results.

RDLS Components

- Laser Scanner
- Roof Mounting System
- 3D Accelerometer
- CamLink Camera Enclosure
- GigE Connected Industrial Camera
- High Quality IMU Capable GPS
- Distance Measurement Instrument, DMI
- Modified Industrial Computer
- Touch Screen Monitor
- Transit and Storage Case
- Mounting Kit System
- Microphone
- Road Doctor Software Products

Problem Detection with RDLS

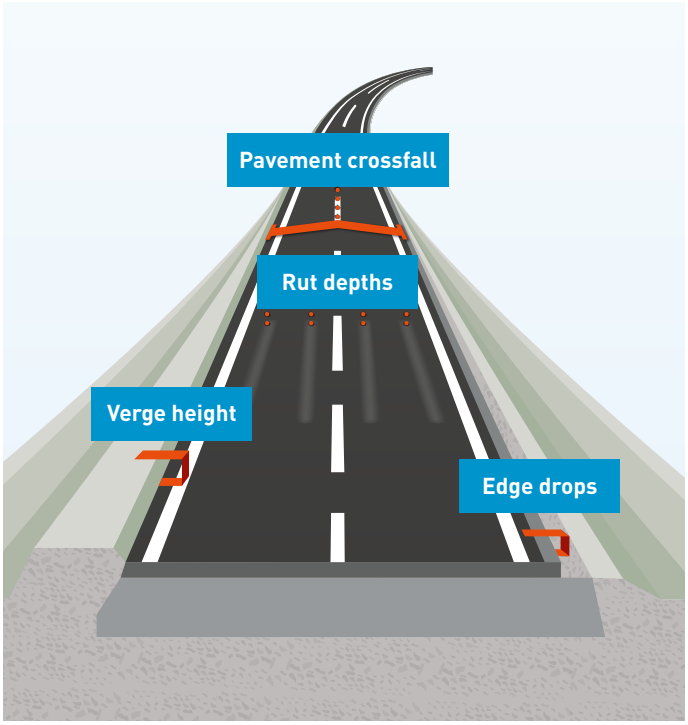
All roads

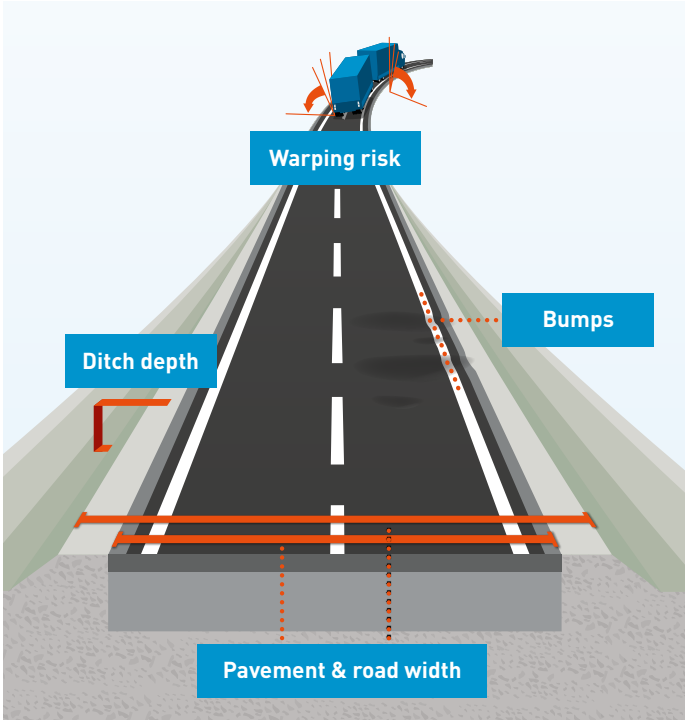
- Longitudinal roughness
- Bumps
- Cross-fall (warping)
- Rutting
- Wide cracks
- Drainage
- Cross section mapping
- Horizontal clearance

Gravel roads

- Roughness
- Drainage
- Dusting
- Firmness

Get detailed information concerning road surface properties





Ground Penetrating Radar Equipment

Roadscanners offers services to select the most appropriate equipment package according to the customer's needs.

Roadscanners markets and resells the following manufacturers' Ground Penetrating Radar systems:

GSSI (USA)

- Geophysical Survey Systems, Inc. (GSSI) manufatures cutting-edge products designed to address a wide range of challenging applications, the GSSI name is synonymous with unsurpassed data quality and field-proven reliability.

3D-Radar (Norway)

- 3D-Radar has pioneered next generation 3D Ground Penetrating Radar (3D GPR) using step frequency radar technology and innovative multi channel antenna design. 3D-Radar uses antenna arrays for efficient data acquisition over large surfaces. This enables the user to create 3-dimensional images of the subsurface objects.

IDS (Italy)

- IDS designs and manufactures Ground Penetrating Radars (GPR), offering the most advanced multi-channel, multi-frequency systems available on the market.

Main Features

Network Level Surveys

- Thickness, structural sections, special structures

Project Level Surveys

- Site investigation, structure thickness, dimensioning parameters, reasons for damages

Independent Quality Control & Quality Assurance

- Thickness & location, air voids content, special structures

Forensic Surveys

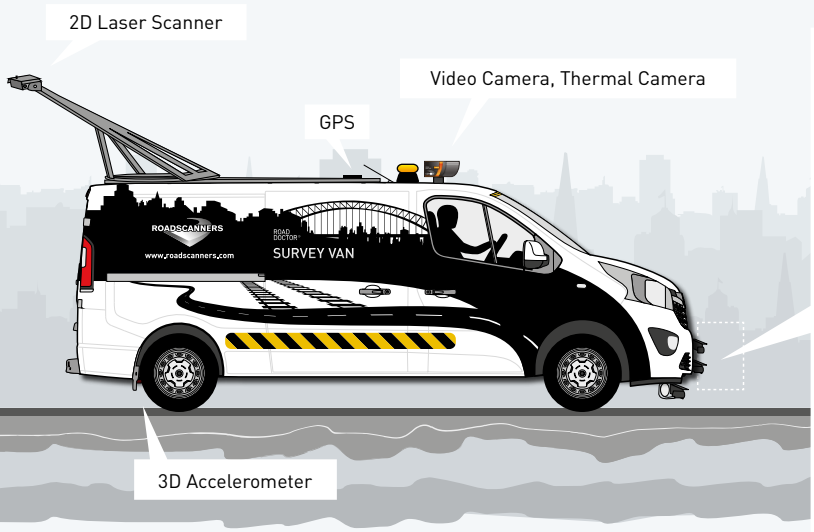
- Thickness, moisture susceptibility, transition structures, etc

Road Condition Monitoring

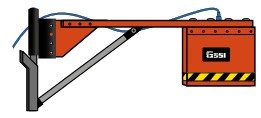
- Pavement distress, moisture, etc

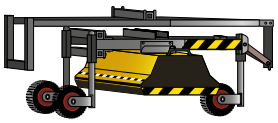
Benefits

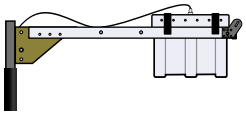
- Data provides a continuous detailed profile of the survey target



GPR System Options


GSSI


3D-Radar


IDS

Road Doctor® Thermal Diagnostics Package

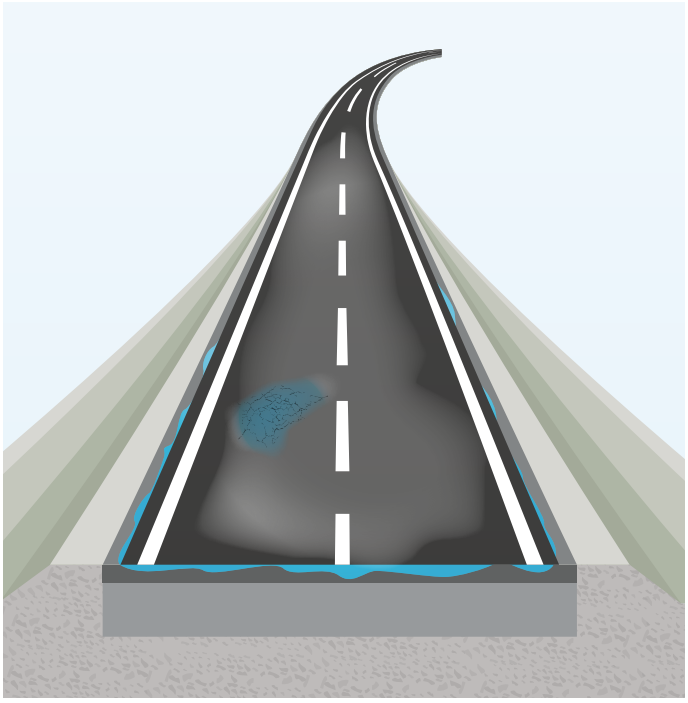
RDTD package offers thermal investigations for traffic infrastructure.

RDTD includes the complete Road Doctor™ CamLink system and in addition a sophisticated thermal camera based data collection and analysis package.

RDTD package is an excellent tool for many kinds of research and development projects related to temperature measurements and how temperature is related to other measurements.

A thermal camera survey is also a non-destructive survey method closely related to EM physics. Currently, new high precision thermal cameras can measure small changes in surface temperatures, even at the range of 0,05ºC from a moving vehicle.

Since the results from thermal camera measurements are affected by solar radiation it is recommended that this system be used at AT NIGHT in Spring or Fall when there is usually a significant difference between the daytime and nighttime temperatures.



RDTD Components

- Thermal Camera
- Thermal Camera Enclosure
- GigE Connected Industrial Camera
- CamLink Camera Enclosure
- High Quality IMU Capable GPS
- Distance Measurement Instrument, DMI
- Modified Industrial Computer
- Touch Screen Monitor
- Transit and Storage Case
- Mounting System
- Microphone
- Road Doctor Software Products

RDSV Features List

ROADSCANNERS

Visual Inventory	Video logging	•	•	•	
	Pavement distress inventory	•	•	•	
	Traffic counting	•	•	•	
	Patches	•		•	
	Road width measurement	•		•	
	Object size estimation	•	•	•	
	Drainage visual analysis	•	•	•	
	Lane markings inspections	•		•	
	Road Furniture	•		•	
Roughness	IRI (class 3)			•	
	Roughness	Limited support		•	
	Pitch, Roll and Yaw			•	
	Cross fall			•	
	RBCSV (warping)			•	
Transverse Profile	Max rut			•	
	Left and right rut			•	
	Ridge			•	
	Settlements	Limited support		•	•
	Deformations			•	
	Clearance			•	
	Edge drops	Limited support		•	
	Verge heights	Limited support		•	
	Ditch depths			•	
	Dusting			•	
Structure	Road structure assessment				•
	Pavement quality				•
	Moisture in structure				•
	Bridge deck inspection				•
	Pavement thickness				•
	Layer thickness				•
	Road condition assessment				•
	Detection and mapping of utility pipes				•
	Engineering				•
	Special structures				•

RDTD Paver Service

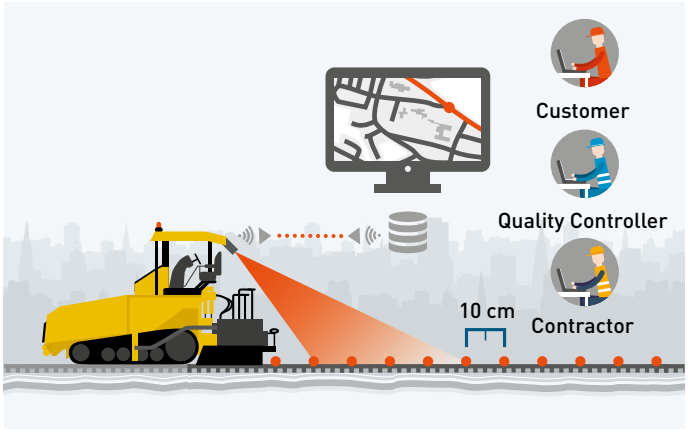
Road Doctor® Thermal Diagnostics

RDTD paver offers an innovative package for quality assurance against asphalt thermal segregation.

The RDTD Paver system is designed for real-time monitoring and storage of asphalt paving temperature and paver speed data. The main purpose of monitoring this information is to minimize problems caused by thermal segregation leading to the development of high asphalt air voids content.

Measurements with a thermal camera positioned directly behind the paver are taken throughout the entire paving process. The collected data is monitored in real-time through a touchscreen monitor on the paver and remotely through the 3G/4G network. The user-friendly RDTD interface provides users with detailed information and makes it possible to follow up problems and make immediate corrections.

Ultimately this technique helps the paving crew to ensure temperature uniformity which is critical to avoiding areas of asphalt segregation and thus achieving the optimal density.



The RDTD system also includes a website service for real-time monitoring. The results are also stored in a database for later use. Utilization of the website service makes the quality assurance process transparent to everyone involved.

RDTD Paver system, an innovative self-reporting pavement quality control tool, facilitates, quick and non-destructive segregation control for the entire width of the pavement.

RDTD Paver Components

- Thermal Camera
- RDTD Paver Main Unit
- Encoder (DMI)

Did you know?

Segregation in asphalt pavement is one of the most common and costly problems in the paving industry. Research has shown that service life of segregated asphalt areas is much lower compared to uniform sections.

Road Doctor® Thermal Diagnostics Benefits

	Contractor	Road Owner
Real-time asphalt temperature measurement and data monitoring through 3G/4G	Thermal segregation, voids and other problems will be detected and fixed during the paving process	Good quality pavement • longer pavement lifetime • lower maintenance costs • less repair works and road closures
Nondestructive segregation and air void control	Less sanctions	Real-time pavement quality assurance
User-friendly interface and database storage	Improved working methods	Road owner can monitor the quality from the "office"
Website service "Paver Web"	Thermal segregation, voids and other problems will be detected and fixed during the paving process	Self-monitoring and self-reporting data available for in-office use Data will be stored for use later during the guarantee period

Consulting Services

Roadscanners offers consulting services all over the world with Road Doctor Survey Van equipment.

We also provide data processing and analysis services for data that the client has collected with their own Road Doctor Survey Van.

The results can even be published and viewed on the RD Web service for the customer's convenience.

Consulting Services

- 2D and 3D GPR Surveys
- Road Diagnostics and Design
- Railroad Surveys
- Bridge Surveys
- Forest and Private Road Surveys
- Laser Scanning Services
- Thermal Camera Surveys
- Road Management System (RMS)
- Seasonal Change Management
- Quality Control and Quality Assurance
- Heavy Vehicle Risk Analysis

RDSV Examples

When it comes to vehicles, clients have different requirements and preferences. Roadscanners has equipped several different kinds of vehicles with the Road Doctor Survey Van package. The vehicles are different but the capabilities remain the same.

Here are a few pictures of different Road Doctor Survey Vans from around the world.

Latvia

Angola

Mexico

Bulgaria

Slovakia

Japan

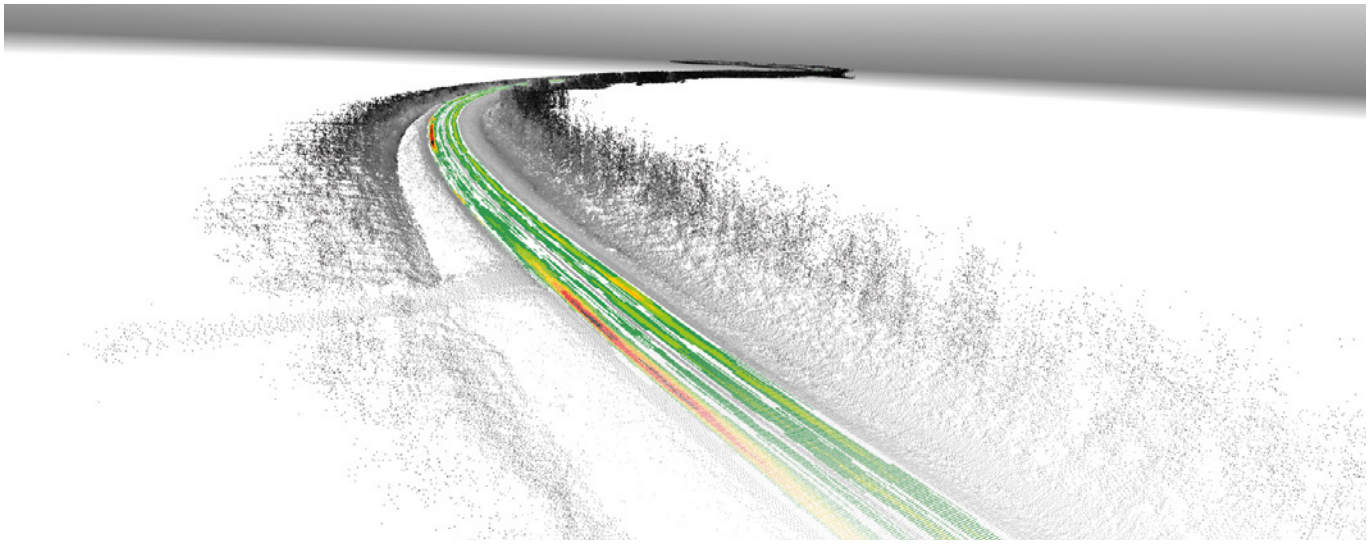
USA

Output Page

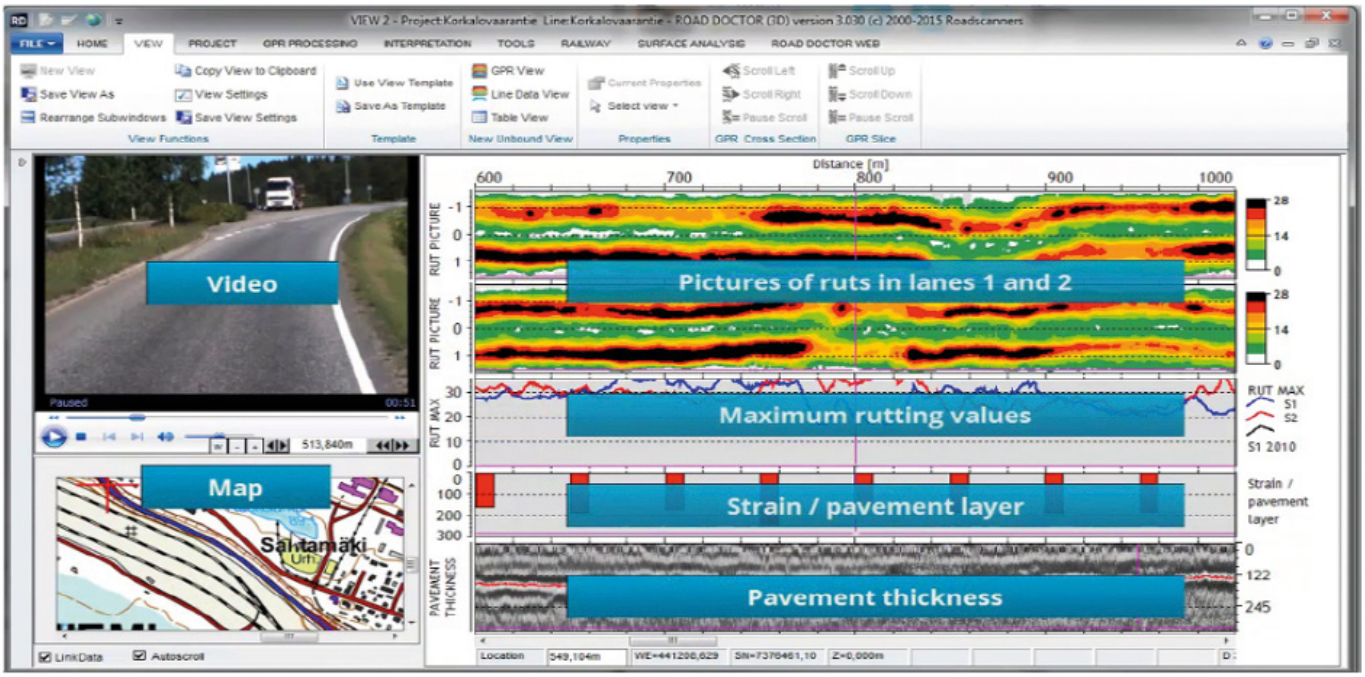
Collected and processed data can be shown in several ways like for example Road Doctor 3 software output, maps, 3D videos, tables and pictures.

Here are some examples:

Map showing rut depth.



Picture presenting relation of rut depths related to exit road junction.



Picture presenting Road Doctor 3 output with different data sets.

ROADSCANNERS

Professionals in the Fields of Traffic Infrastructure Management and Design, Geosciences, and IT.

Established in 1998, Roadscanners is specialized in developing tools and services for traffic infrastructure condition monitoring and management. Roadscanners provides consulting services, hardware systems and software.

The main focus of the Roadscanners' activities is structural and functional condition monitoring and analysis of roads, railroads, bridges and airports. Roadscanners uses the monitoring and analysis results to produce precise and economically sustainable rehabilitation designs and plans. The key to this process is Roadscanners' developments and expertise in high tech non-destructive survey equipment. We use a combination of ground penetrating radar, laser scanner, accelerometer, HD and thermal camera linked together with GPS to make a complete picture of the infrastructure.

Roadscanners' main office is located in Rovaniemi, Finland. The company also has consulting offices in Tampere and Helsinki Finland. Currently, the group also has four subsidiaries, Roadscanners Sweden AB, located in Borlänge, Sweden, Roadscanners Central Europe s.r.o, located in Prague, Czech Republic, Roadscanners Norway AS in Kirkenes, Norway and Roadscanners USA Inc., Dover, USA.

Leverage from the EU 2007–2013

European Union
European Regional Development Fund

ROADSCANNERS OY
Varastotie 2, FI–96100 Rovaniemi
(Head Office)
FINLAND
Tel. +358 (0)207 815 660
FAX +358 (0)207 815 662

ROADSCANNERS SWEDEN AB
Alkottsgatan 10 S-78452 Borlänge
SWEDEN
Tel. +46 (0)243 217 960
Fax +46 (0)243 217 961
Org.nr. 556594-8972, Säte: Borlänge

ROADSCANNERS NORWAY AS
Postboks 57 9915 Kirkenes
NORWAY
Tel. +358 (0)50 469 5300
Organisasjonsnr. 912 339 637

ROADSCANNERS USA INC.
c/o National Corporate Research Ltd
615 South DuPont Highway, Dover, DE 19901, the U.S.A
Fax +46 (0)243 217 961
Mobile (int.)+358 (0)50 543 0021

ROADSCANNERS CENTRAL EUROPE s.r.o
Červeňanského 2824/15 155 00 Prague 5
CZECH REPUBLIC
Tel. +420 601 325 131
DIČO: CZ24251496

info@roadscanners.com • www.roadscanners.com