ROMDAS System

Overview

Providers of Innovative Technology for Measuring and Managing Roads.

ROMDAS System Overview

ROMDAS® (**RO**ad **M**easurement **D**ata **A**cquisition **S**ystem) has been developed as a comprehensive, cost effective and modular system for collecting asset and pavement information. Implemented in over 60 countries, it's flexible design allows for installation on locally sourced vehicles and meets widely accepted international standards.

Depending on your needs, a ROMDAS system can be easily customized with a variety of add-on modules to suit the specifications and budget of any project.
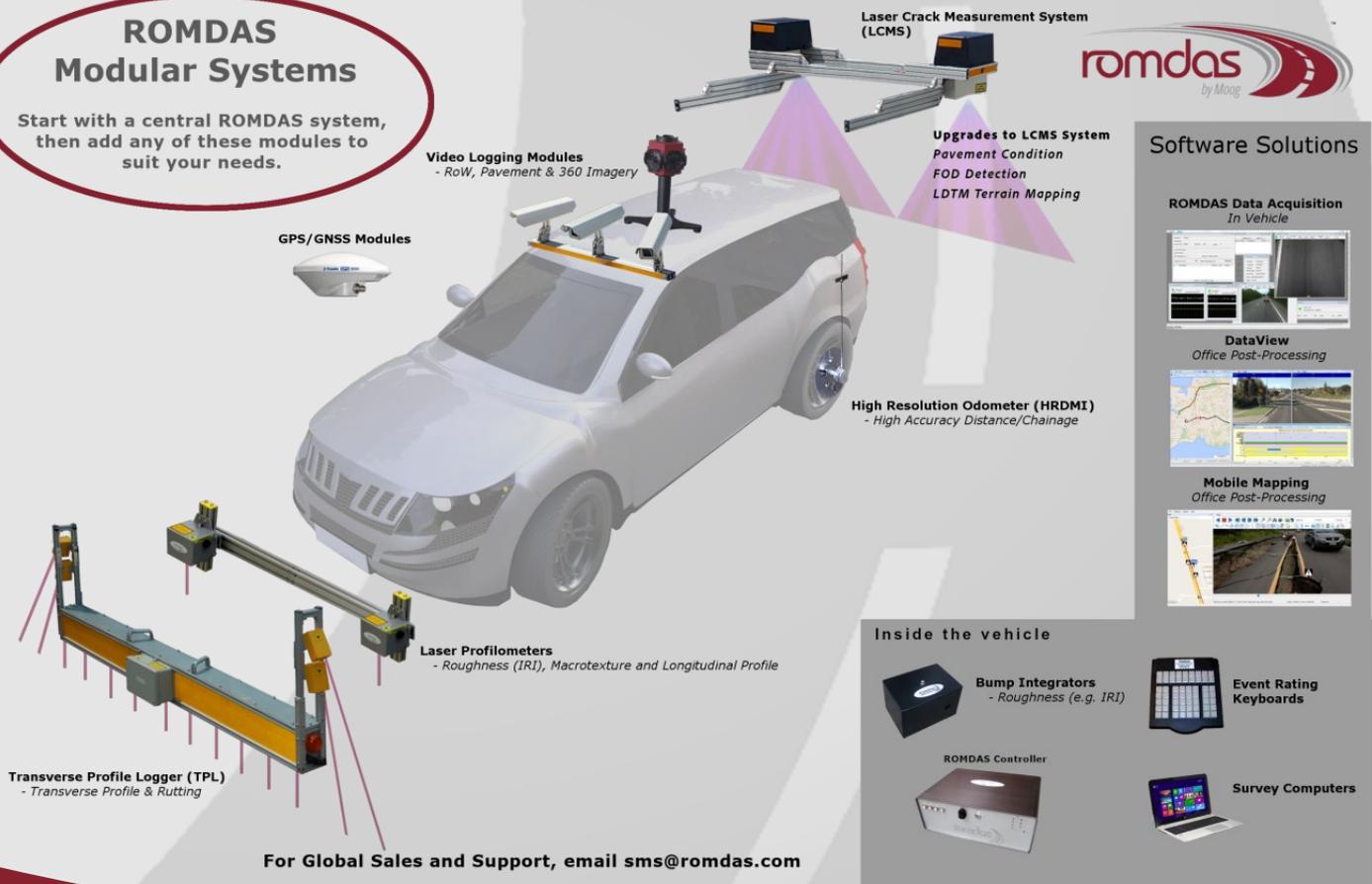
Whether a private consultant, government department or research institution, ROMDAS offers great reliability, flexibility and ease of use for anyone who needs to quickly and accurately collect asset data.

ROMDAS CAN BE USED FOR...

- ✓ High-speed network level or project specific road surveying,
- ✓ Road roughness surveys,
- ✓ Transverse profile/rutting surveys,
- ✓ Macro-texture (MPD),
- ✓ Visual condition, environment or event rating,
- ✓ Automatic crack and surface defect inspections,
- ✓ Location referencing (spatial GPS/GNSS data or linear LRP data),
- ✓ GIS mapping of condition data and road alignment,
- ✓ Video logging surveys (right of way, 360 and pavement view),
- ✓ Mobile mapping of roadside assets & inventory,
- ✓ Road geometry surveying,
- ✓ Travel time and congestion surveys,
- ✓ iRAP road safety surveys,

ROMDAS Modular Systems

Start with a central ROMDAS system, then add any of these modules to suit your needs.

Video Logging Modules - RoW, Pavement & 360 Imagery

GPS/GNSS Modules

Laser Crack Measurement System (LCMS)

Upgrades to LCMS System
Pavement Condition
FOD Detection
LDTM Terrain Mapping

High Resolution Odometer (HRDMI) - High Accuracy Distance/Chainage

Laser Profilometers - Roughness (IRI), Macrotexture and Longitudinal Profile

Transverse Profile Logger (TPL) - Transverse Profile & Rutting

Software Solutions

ROMDAS Data Acquisition *In Vehicle*

DataView *Office Post-Processing*

Mobile Mapping *Office Post-Processing*

Inside the vehicle

Bump Integrators - Roughness (e.g. IRI)

Event Rating Keyboards

ROMDAS Controller

Survey Computers

For Global Sales and Support, email sms@romdas.com

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SPECIAL POINTS OF INTEREST:

- Vehicle mounted modular design,

- Exceptional price,

- Offers a wide range of pavement condition and roadside asset data for infrastructure management systems,

- Industry standard data at a better price,

- iRAP accredited,

- Training & installation services available ,

- High-level of pre and posto-sale customer support,

- Post-processing and data viewing software available,

- Install on locally sourced vehicles,

- Generic file formats for easy importing into GIS and Asset Management software (including HDM-4).

HISTORY

ROMDAS is a premier and cost-effective system used for collecting road condition data. Since its inception in the early 1990s, Data Collection Limited (DCL) now a Moog Inc. company has supplied over 200 ROMDAS systems to more than 60 countries, from Afghanistan to USA to Zambia.

Early success was driven by design principles which saw robust, easy to use and cost-effective products installed on locally sourced vehicles. These design principles are still what drive product development today.

Over the past 25 years our product range has expanded to include mid and high-end modules for collecting a variety of critical asset and pavement condition data. The range and flexibility of ROMDAS systems give customers the ability to choose the modules they want, based on the specific types of data, survey environment and budget of their project. Ensuring they have the best products for their application at the best overall price.

TYPICAL APPLICATIONS

- Network surveys for maintenance planning,

- Condition surveys on both paved and unpaved roads,

- Post-construction validation surveys,

- Asset and inventory surveys,

- iRAP or other videos based safety inspections,

- GIS mapping projects,

- Research projects,

- Road corridor mobile mapping,

- Collecting condition data for HDM-4 analysis,

1990 ⟶ **Today**

Manufactured by Data Collection Ltd, a Moog Inc. company

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ROAD ROUGHNESS & LONGITUDINAL PROFILE

Roughness is usually the first type of data collected when surveying roads as it gives a good overview of the general condition of the road. There are several technologies used to collect Roughness (IRI), each with their specific benefits;

Bump Integrator:
The bump integrator is low cost and robust. It is designed for use in tough conditions and unpaved roads where more sensitive laser equipment is not applicable. Meeting World Bank Class 3 and applicable ASTM roughness standards, it is a perfect option for any user needing to collect roughness data on rough of mixed surface roads.

Laser Profilometer:
These ASTM 950 compliant inertial laser profilers are the modern standard for collecting high-accuracy and repeatable roughness data on good quality roads or highways.

MACRO-TEXTURE (MPD)

Upgrades are available for the Laser Profilometers which enable the collection of Macro-texture (MPD) data. Alternatively, the LCMS 3D profiling module offers Macro-texture data across the whole lane.

RUT DEPTH & TRANSVERSE PROFILE

ROMDAS offers precision laser sensor equipped Transverse Profile Logger Ver. 3 (TPL) for recording rut depth and transverse profile data.

The TPL ver.3 is a bumper mounted beam measuring a full 15-point transverse profile. ROMDAS software automatically analyzes the profiles to calculate the rut depth in each wheel-path. It comes with a rugged design and offers high sensor accuracy. The TPL ver.3 can be easily detached from the survey vehicle when not in use. It offers an exceptional balance between accuracy, ruggedness and price.

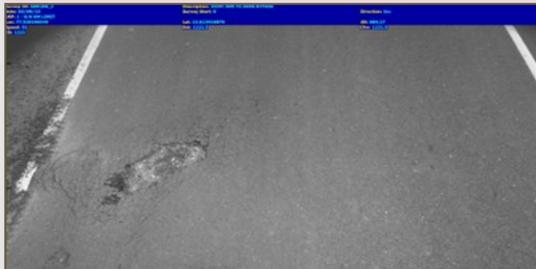The TPL ver. 3 has proven itself in tough conditions and is extremely practical to be used for -

- Small and large scale network surveys
- Post-construction quality surveys
- Routine condition surveys for maintenance planning.

ROMDAS System Overview

VIDEO LOGGING

Right of Way (ROW)

Pavement View

360 View

Recording images of the road corridor or pavement has traditionally been utilized as a quick and permanent reference for office staff. With the advancement of processing software ROMDAS can provide even more benefits to video logging. Including features like;

- Creating GIS databases using mobile mapping software,
- iRAP coding,
- Recording lists of assets and events referenced to chainage and GPS,
- Crack and defect measurements,
- Image trigger distance for manageable files sizes,
- Customizable data overlay onto each image.

Users can select custom configurations from 3 types of available cameras:

Right Of Way (ROW) Cameras
ROW cameras focus primarily on the surroundings and assets within the road corridor. Using strong magnetic mounts they are easy and flexible to install on vehicles. Progressive scanning cameras record high resolution images of the ROW and output them as .AVIs or .JPEGs.

Pavement View Cameras
Mounted perpendicular to the road these cameras record detailed images of the pavement surface. These images are processed in the office to identify and measure visible pavement defects like cracking and potholes. This method is safer and more accurate than site inspections.

360 Degree Cameras
Capturing a full 360 degree image, these cameras are combined with mobile mapping software for an immersive view of the road corridor. Users can calculate GPS coordinates and measurements from images and add them directly to GIS map layers. This new module is one of the most user-friendly methods for creating detailed GIS databases.

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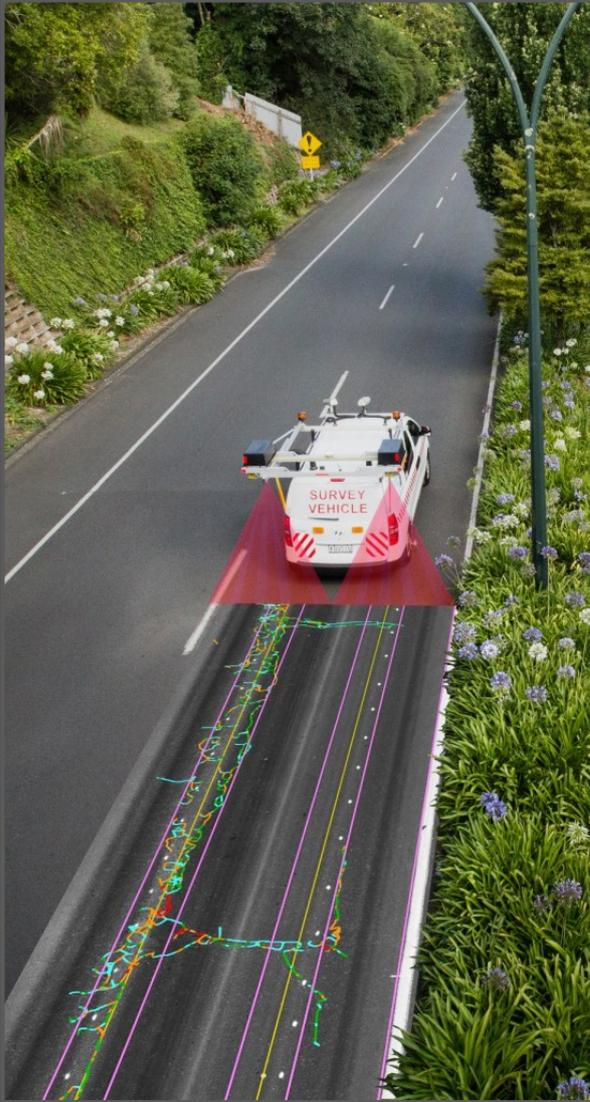
ROAD GEOMETRY

ROMDAS offers an integrated GPS and Inertial Measurement Unit (IMU) to record the geometry of the road at normal traffic speeds. Standard outputs include Gradient, Cross-slope and Radius of Curvature. Alternatively ROMDAS LCMS users can opt for an upgrade to record road geometry.

LASER CRACK MEASUREMENT SYSTEM (LCMS)

The LCMS employs 2 high powered scanning lasers and represents the latest direction of data collection systems. Recording extremely detailed 3D profiles of the road surface, the LCMS is able to analyze and calculate a wide variety of pavement data. Including the following:

- Cracking (including, width, depth, length, type and even sealed cracks),
- Rut depth, width and cross-sectional area,
- MPD Macro-texture,
- Ravelling detection,
- Pothole detection,
- Concrete joints and faulting,
- Water pooling depths,
- Pavement images automatically overlaid with defects.

LCMS offers advanced features which overcome a number of real-world limitations of traditional equipment. Including the ability to detect pavement markings to compensate for driver wander and exclude any data from outside the lane.

LOCATION REFERENCING & GPS

Accurate location referencing, including GPS locations, are critical for any data collection system. ROMDAS employs high resolution odometers for extremely accurate chainage/distance measurements and offers several options for compatible GPS receivers.

Ranging from low cost to submeter accuracy, you can choose one of our integrated GPS receivers or choose to use your own.

KEYCODING: IF YOU CAN SEE IT… YOU CAN RECORD IT.

ROMDAS Keycoding is an extremely useful tool to create custom lists of assets, events or conditions. They are recorded at the touch of a button and referenced with a location, allowing users to easily record a wide variety of supplementary information during surveys. This feature is free with every ROMDAS system.

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ROMDAS SOFTWARE

ROMDAS users can take advantage of a variety of software solutions to greatly enhance their processing and decision making.

Data Acquisition Software

ROMDAS DAS is included with the purchase of every ROMDAS system. It is used in the survey vehicle to interact and control all ROMDAS components. It provides real-time status to operators as well as collects, stores and processes all data into generic Microsoft Access databases.
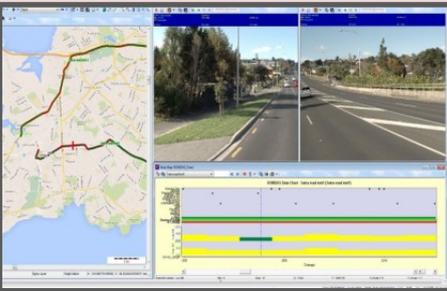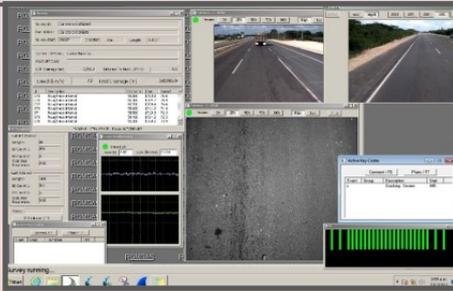
DataView Post-Processing

Aimed at assisting ROMDAS users with the often arduous task of office processing and quality control, DataView offers the following key features:

- Synchronized viewing of all data,
- GIS mapping,
- iRAP coding,
- Video rating and measurements,
- Database integration.

Mobile Mapping Software

Users who need to create detailed GIS maps of assets, inventory or events can now accomplish this using video based mobile mapping software. Utilizing the video, GPS and geometry data collected during surveys this office based software allows customers to mark and measure visible features and dynamically add them to GIS map layers. Layers are compatible with industry standard GIS software like ArcGIS or Google Earth.

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CUSTOMER SERVICE (AMS)

All ROMDAS systems include a 12 month warranty and Annual Maintenance Subscription (AMS). The AMS entitles customers to free technical support, software updates, discounts and more. Subsequent AMS subscriptions can be purchased to ensure users have access to support and always get the most out of their system.

As part of an ongoing pledge to encourage technical education around the world, we provides free AMS to all educational institutions.

ON-SITE TRAINING & INSTALLATION

Our technicians have extensive global experience with training customers on the installation, operation and maintenance of ROMDAS systems. Good quality face-to-face training can prepare new operators for the potential challenges of performing high-speed surveys.

ROMDAS products have been implemented in over 60 countries and has been utilised in some of the toughest conditions imaginable. Through continued hardware and software development ROMDAS offers quality, accuracy and reliability at very competitive prices and with an emphasis on high levels of customer support.

Our Mission:

"We strive to provide innovative and cost-effective products for our customer. Through ongoing product development and working closely with our users we are able to provide a full range of solutions for asset and pavement management, from equipment for collecting and analysing data to full asset management systems integral for effective maintenance planning and budget allocation"