

# ROAD MEASUREMENT DATA ACQUISITION SYSTEM

# ROMDAS

NZ Volume 1 No. 2

July 2000

## WELCOME

Welcome to our second New Zealand newsletter of 2000.

Since our last newsletter we have successfully completed several surveys and have been busy further enhancing and adding capabilities to the ROMDAS Survey System. There are now 108 ROMDAS systems supplied to 34 countries. Refer to Figure 1 for the capabilities of the ROMDAS system.

The latest information on ROMDAS is available from our web site at:

[www.ROMDAS.com](http://www.ROMDAS.com)

## Inventory and Asset Surveys

Two of the most critical items in any ongoing successful asset management program are:

- An accurate Inventory of the assets (collected only once and updated periodically or when the infrastructure is changed)
- An ongoing condition rating that determines the level of service criteria where the asset can be rated on a scale of "good" to "poor".

ROMDAS has been specifically designed to collect these data efficiently and at a low cost.

Any asset element, for example traffic signs and signals, power and lighting poles, service covers, footpath, kerb and channel

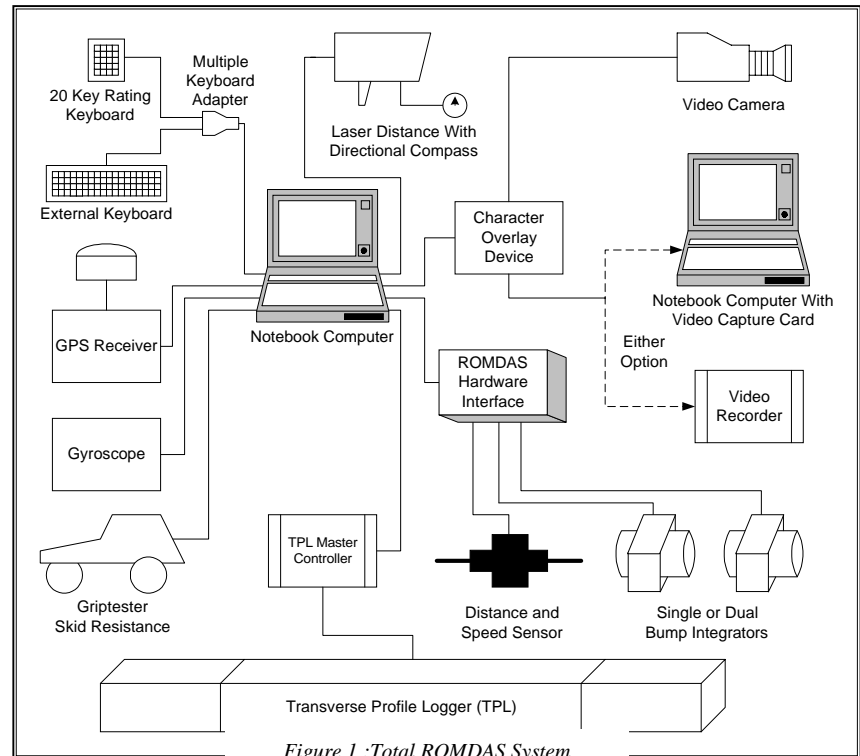


Figure 1: Total ROMDAS System

information, can be assigned to a ROMDAS 'Keycode Event'. During the survey the operator presses the key and the location of the event is recorded. The same applies to condition attributes such as cracking or potholes. Over 100 different events can be defined when using our dedicated rating keyboards.



Figure 2: Laser Surveyor

Our Laser Surveyor option (see Figure 2) can be used to enhance the inventory data collection. This is used in conjunction with a GPS receiver to establish the precise location of the inventory items. With the survey vehicle stopped, the Laser Surveyor is used to 'shoot' the position of the inventory item. Based on the vehicle's GPS position, the distance, azimuth and angle to the inventory item, its GPS co-ordinates are established.

For our N.Z. surveys we use Trimble Pro-XRS GPS units. The data is differentially corrected to obtain very accurate co-ordinates (sub 1 meter). At present real-time corrections are available in the Auckland region from an RTCM signal.

A Fibre Optic Gyroscope is used to provide continuous position data when loss of GPS satellite lock occurs for any reason (such as in CBD districts with tall buildings). The ROMDAS software performs the necessary integration between these instruments and the Laser positioning data to give the accurate GPS co-ordinates of each inventory asset.

By combining the GPS and Laser Surveyor option with the ROMDAS Keycode event rating system we can quickly and accurately record details on the type and position of assets. Optionally, a digital camera can also be used to record a still image.

---

---

## Video Logging Survey for New Plymouth District Council

---

---

In June 2000 we completed a video logging survey for the New Plymouth District Council (NPDC) of their rural road network. This involved nearly 1200 km of roads, 200 km of which were unsealed. We completed the survey in under 7 working days and all data were provided within 2 weeks of completing the survey.

The results were digitised and combined with the data collected during the survey into our integrated database, which is in a Microsoft Access® database format, that can be displayed and reviewed using the ROMDAS Road Management System software or other applications.



Figure 3: The Survey team in New Plymouth District - Paul Hunter and Evan Fray (Left to right)

The video logging survey for the New Plymouth District Council used a single video camera but as

mentioned in our March Newsletter we have the capability to use up to three cameras, all recording a different aspect of the road or road side. Once these have been digitised as .AVI files, they can all be viewed simultaneously with the ROMDAS Road Management System.



Figure 4: The ROMDAS vehicle on the NPDC project

---

---

## Roughness Survey for North Shore District Council

---

---

On the request of the North Shore City Council, the ROMDAS system was used to collect roughness data for some recently rehabilitated and resurfaced roads. Data were collected at 20 m intervals and used to evaluate the performance of the contractor involved in the work. Two bump integrators were used to record the roughness in each wheelpath and two passes were made in each direction for more accurate measurements.

---

---

## Data Collection Survey Costs

---

---

Most of our survey options can be combined in a single pass over the road, enabling us to add additional data collection services for a minimal extra per km cost over the original survey cost. For example if we are already travelling over your road network doing a Video logging Survey for minimal extra cost you can also collect any combination of roughness, transverse profile, extra cameras for video logging and GPS co-ordinates etc.

---

---

## Customisation

---

---

The development of our ROMDAS survey software and our post processing ROMDAS Road Management Software are all completed in house. Therefore as we are not constrained by any proprietary systems we are able to customise our systems to meet your particular survey requirements. This gives us some distinct advantages in our survey capabilities including:

- We can customise our software and systems to collect and output the collected data in any format you may specify.
- If you have a data collection instrument that isn't included in our standard range of survey options we can certainly see if we can incorporate it into the ROMDAS system for your particular data collection survey requirements.
- Because we are also end users of the ROMDAS system as well as the developers we expect to further enhance and streamline the ROMDAS data collection and surveying processes to provide faster, more accurate and relevant data at a more cost effective rate.

An example of customisation to the client's requirements was the recent NPDC Video Logging project. The client requested the collection of side thrust gauge data for speed advisory signs on horizontal geometric curves. We therefore customised the ROMDAS system to enable the incorporation of the subsequent data.

---

---

## FURTHER INFORMATION

---

---

A sample Video and a free comprehensive CD with software, manuals and working papers are available. To receive copies, or if you have further queries about any of our road survey services please contact us at:

HTC Infrastructure Management Ltd.

e-mail: [info@romdas.com](mailto:info@romdas.com)

Phone: +64-9-411-9098

Fax: +64-9-411-9096

[www.ROMDAS.com](http://www.ROMDAS.com)