

About Telematics

'Telematics' refers to the gathering of vehicle and driver specific information through a computerised wireless system attached to bus engines that monitors certain functions such as engine temperature, fuel consumption, speed, handling (eg braking and cornering) and idling.

This data is captured in real time and used to provide better services to our customers and operate our fleets in a smoother, safer and more efficient manner. The introduction of telematics complements the Safe and Fuel Efficient Driving (SAFED) training programme for drivers, which is designed to give them greater confidence in their skills and help to self-manage their performance.

Use in New Zealand

- NZ Bus is the only public bus operator in New Zealand that has installed telematics in its fleet. We began installing this system with the support of our drivers in Auckland in May this year. Over 300 buses are now fitted out, with installation well underway in Wellington.
- The technology is supplied by global firm MiX Telematics with support from Vehicle Technologies of New Zealand.
- Not all vehicles are compatible with the technology. Over the next few years, those vehicles will be retired and replaced with new fleet that have been fitted with telematics before they begin service.
- Other businesses that use this technology in New Zealand include Fonterra and BP.

Driver Performance

Drivers are able to monitor their performance through an in-cab **RIBAS** unit – a 'Virtual Trainer' that issues visual alerts when the set safety, comfort and engine efficiency thresholds are being exceeded. The thresholds are based on:

- R** - Ride Comfort (Over Revving and Harsh Cornering)
- I** - Excessive Idling
- B** - Harsh Braking
- A** - Harsh Acceleration
- S** - Speeding

The focus is currently on braking, speeding and acceleration. Starting off **green**, **RIBAS** will show an **amber (orange)** warning light each time the vehicle approaches the threshold that NZ Bus has established for that event. The **amber** warning will change to **red** when the threshold has been exceeded. For example, the system recognises urban speed limits and the bus motorway limit of 90kph for its vehicles. If the speed limit is crossed at any time, the 'S' on **RIBAS** will turn **red**.

The Benefits of Telematics

- *Passenger Comfort:* Improved driver performance and awareness results in smoother rides for passengers.

- *Performance Improvement:* Data reports are issued to drivers providing them with a scorecard on their performance over a week, with an overall result of **green**, **amber** or **red**. About 25% of our 1,600 drivers nationally have been put through the SAFED course so far and as telematics is rolled out more widely, we are able to identify and prioritise those drivers who would benefit the most from undertaking one-on-one training.
- *Fuel Efficiency:* Smoother driving improves fuel efficiency and reduces exhaust emissions. The data can also be used to match bus types to routes that will maximise fuel efficiency.
- *Maintenance Costs:* Telematics issues high engine temperature and low coolant warnings via email as soon as they occur. Fleet Services can then act preventively on any bus to ensure they are dealt with before any significant damage is caused. Smoother driving also reduces wear and tear.
- *Network Improvements:* Telematics actively records the time each trip takes from start to finish and the speed of the bus throughout. This information can then be broken down and compared across the day, week and month and used to inform network scheduling and planning and provide real time information on the areas of cities that are blocked up by traffic and at what time of day and week.

The Results

Following installation and driver instruction on how it works, the number of drivers recording **red** level scores has dropped by over 70% in the first month.

Improvements were seen across all monitored driving behaviours, including a 67% improvement in harsh braking events and 50% improvement in harsh acceleration events.

It is still too early to assess the full benefits of telematics, but over time we expect it will lead to quantifiable improvements in:

- Customer satisfaction
- Driver satisfaction
- Fuel efficiency and exhaust emissions
- Maintenance costs
- Scheduling and network design