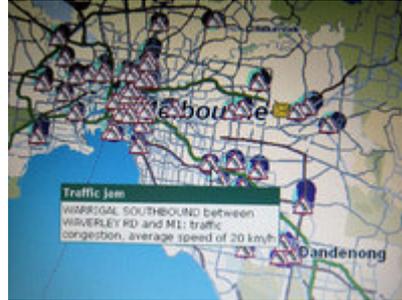Live traffic reports coming to a GPS near you
By David Braue on 16 August 2007

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Find a faster way

Melbourne peak-hour commuters can stop hanging out for the radio traffic reports, after the launch of Australia's first automated traffic congestion notification system.

The service, called the Suna (pronounced SOON-a) Traffic Channel, was launched by RACV subsidiary Intelematics Australia this week to provide drivers with real-time information on accidents, rubbernecking slowdowns, icy roads, protests or anything else that can affect the smooth flow of traffic.

Distributing such information has historically relied on radio reports based on data provided by the VicRoads Traffic Management Centre in Kew. The Suna service, however, uses an obscure radio broadcasting technology called Radio Data System -- capable of carrying 1.2 kbps of data over a subcarrier channel on existing FM radio stations -- to transmit data in the Traffic Message Channel (TMC) format.

With such a low-bandwidth connection, TMC messages are sparse: each intersection in Melbourne has a unique code, and events are represented using a code that reflects the type of disruption, and a pair of intersection numbers between which the incident has occurred.

This data is received directly into in-car GPS units for display on current driving maps. TMC-compatible GPS units use congestion information to automatically reroute drivers using a less congested alternative route (most midrange and high-end GPS units sold here in the past few years support TMC, although some require a replacement antenna-laden cradle).

In a test drive at the launch, traffic events were flagged on the GPS screen, with the audible assistant clearly informing the driver of an upcoming traffic event and suggesting an alternative route. At the time of the drive, 45 separate traffic events were being monitored across metropolitan Melbourne.

TMC technology has been used for years in Europe and North America, and the combination of RDS and TMC is reflected in ISO Standard 14819. However, the Suna service represents the first time it has been made available to Australian motorists. The service is now live, but will be marketed more aggressively to Melbourne motorists through partnerships with GPS makers -- who will label their suitable products as being Suna-compatible -- in the pre-Christmas buying season.

To generate the traffic alerts, Intelematics partnered with road transit authority VicRoads to tap directly into traffic sensors that are already strewn across Melbourne's roads. Proprietary traffic density models are used to automatically identify areas with traffic slowdowns based on visual images of current traffic events; these events are categorised by human operators and each event is added to the TMC broadcast -- carried in Melbourne at the 101.1 FM radio frequency.

The system relies heavily on integration between traffic management and modelling systems, a task that Intelematics CEO Adam Game said was far from easy. "It was a big effort," he said, "to take traffic data and model it in a way that can predictably reflect the situation on the roads. VicRoads has been very accommodating, since they recognise that the role of road authorities is to use technology for improving traffic flows and road safety."

BLACKIE McDONALD

Global support for TMC made technical decision-making relatively easy, Game says, even though Australia's dense metropolitan areas posed novel challenges. In Europe, drivers spend more time travelling between cities so traffic events are spread more evenly across large areas -- but Australian drivers tend to stay in one city and circulate within a relatively small area. "We believe these [Australian services] will be the densest urban traffic services outside of Japan," he says.

Intelematics has set up the service in the spirit of open information sharing, with non-exclusive access to the VicRoads information and the TMC data available through standard XML-TMC based data feeds. These feeds are available for integration into other mapping services, potentially making current traffic information a standard feature on Australia's growing number of mapping and navigation sites.

To show the potential of such services, live Suna data is also available as map overlays on several pages of the RACV's Web site (current Melbourne traffic conditions are available here.)

For now, the Suna Traffic Channel service is free to owners of suitable GPS systems, although the signal is encrypted and could be access-controlled through subscription services. Manufacturers could potentially buy one-year licences to sell with their units -- consumers would then foot the bill -- but Game says a more likely scenario is that manufacturers, seeking to differentiate their products, will pay a nominal fee for lifetime access to Suna.

Intelematics is currently in talks with road authorities in other states and has commenced preliminary TMC broadcasts in Brisbane and Sydney. The service will be launched in those cities in the first half of 2008, with Adelaide and Perth to follow later next year.