



Attachment 1: Background information of RTI systems in New Zealand

	Christchurch	Auckland	Hamilton
RTI was started in	2000, citywide with ca. 120 buses and 50 signs	2003, on one line in the city centre	2005, on 4 lines (with 30 bus stops information displays)
Supplier	Connexionz (Christchurch)	Saab ITS Australia/BCE (Brisbane City Enterprises), Technisyst (since 2005)	Radiola Aerospace (Porirua), in cooperation with Gemini Positioning Systems (Canada)
Number of vehicles currently equipped	ca. 190 buses	more than 880 buses no trains and ferries yet	ca. 55 buses
Communication system used	Private radio network	GPRS ¹	unlicensed public-domain radio channel
Information devices used	- ca. 500 bus finder (ca. 20% of all bus stops) - LCD-screens ² (at the central bus Exchange) - website (real time information available at the journey planner) - cell phones (WAP ³)	- ca. 200 on-street displays - next stop information on buses via on-board speakers and displays (only on the Link route) - bus priority at traffic lights (at more than 170 intersections)	- ca. 125 bus stops information displays (audio and visual). The minor bus stops have small displays with solar power panels. - 4 multi line displays for major stops

¹ GPRS (General Packet Radio Service) is a standard for wireless communications which runs at speeds up to 115 kilobits per second, compared with current GSM systems of 9.6 kilobits. This data transfer is typically charged per megabyte of transferred data and not per connection time (like a 'traditional' phone line). This is more expensive than a radio-system, which is why the equipment does not send information continuously, but only at certain set points.

² LCD-screens are higher quality and more expensive displays than the Bus finders, and are mainly used at central stops and interchanges.

³ WAP is short for Wireless Application Protocol and allows to browse the web with a cell phone, in this case to get the RTI.

Who runs/controls the system	Environment Canterbury	Initially Auckland City Council. In June 2006 Auckland City Council signed over management of the system to Auckland Regional Transport Authority, so that the system can be rolled out across the region.	The RTI system is run by Radiola who runs the central computer, under contract to Environment Waikato.
Reliability	98% (although there are some problems with the accuracy of the bus finders)	Ca. 80%	No precise measurement at the moment. EW is about to do a major push on reliability.
Costs	Ca. \$1.5m when introduced the basis system in 2000. Ongoing costs for improvements (e.g. software upgrades): ca. \$200,000 p.a. Costs SLA agreement: \$275,000 p.a.	Total contract cost: \$6.9m over the three stage implementation period in Auckland City ⁴ . Next stage (roll out of the system in the ARTA area): \$9.5m	Ca. \$1.4m Maintenance per year: ca. \$100,000
Funding	Special funding from LTNZ. Costs for SLA agreement are shared between Christchurch City Council and Ecan.	First contract (Auckland City) - LTNZ: \$3.23m - Infrastructure Auckland: \$3.14m - Auckland City's bus priority budget funded balance - Operating costs: jointly funded by ARTA, Auckland City (pay 25% of communication cost for on street signs) and operators (pay 25% of communication costs for buses).	LTNZ: 50%, over an eight year period. No financial contribution from operators or City Council.

⁴ Stage 1: the Link route, stage 2: installing and testing passenger information displays on radial arterial routes, stage 3: equipping the remainder of the bus fleet with GPS equipment

		<p>Next stage (Auckland region) - LTNZ: \$5.03</p>	
<p>Plans for the future</p>		<p>RTI is available in Auckland itself, next step is to expand it throughout the region (already started). ARTA is also considering RTI for ferries. No plans for trains at the moment. Another extra step (according to funding and priority) could be internet and cell phone applications.</p>	<p>The Radiola system has an 'Open System Architecture' (OSA), which means that it offers options for the future, such as internet or a cell phone application or a combination with a bus priority system. The actual planning is to introduce a texting service via cell phones next financial year. Other plans are to upgrade the internet site and to include buses coming into Hamilton from rural areas in the RTI system. In a few years RTI might be introduced in rural services in other areas such as Taupo.</p>