



Keeping track

by Richard Bray

Radio ID tags track inventory

When a technology has the revolutionary potential of Radio Frequency Identification (RFID), hyperbole can fall far short and analogies become hard to find. Imagine a super bar code that can receive and record, as well as transmit information, without operator intervention.

Some of today's applications provide hints about the future. RFID "tags" on vehicles traveling the 407 Highway transmit information to a corporate mainframe for automatic billing. The Shell EasyPay and Esso SpeedPass key-chain tokens let drivers pay for their purchases wirelessly, right at the pump.

In the years ahead, RFID tags will be embedded on most items purchased by government in Canada. Many such tags will be capable of recording information about where their associated equipment has been and what it has done. If employees have RFID tokens, it should be possible to know, once and for all, who had the last cup of coffee, failed to put toner in the copier, or downloaded a virus to a laptop.

Looking further into the future, it will be possible to create documents that can be placed in intelligent cabinets and literally file themselves, or medication containers that refuse to open unless they are destined for the correct patients.

There are two parts to any RFID system. The tag is a transponder that communicates with a reader, or interrogator. The tag can carry information as basic as a Stock Keeping Number (SKU) or as complex as temperature and vibration history. They can be as small as a grain of salt or as large as a sugar cube. The readers can be permanently mounted at the gates of a container terminal of a warehouse door, carried around as a handheld by human operators or even installed on shelves, to maintain a permanent inventory record, item by item.

There are obvious advantages for RFID standards, but the technology is probably more comparable to two-way radios than to telephones. To be useful, every telephone must communicate with every other telephone, but a small-town police department needs different two-way radios than an air traffic control system. In the same way, there may not be any advantage to striving for a "universal" RFID system. If the procurement is for an RFID system to track livestock in northern Alberta, the specification will be vastly different from a system that maintains a car parts inventory in a highway ministry warehouse or safeguards file folders in a Citizenship and Immigration detention centre.

That said, there will be a market for hardware that bridges different RFID technologies. SAMSys Technologies of Richmond Hill, Ontario, builds readers that support the broadest possible range of RFID tags so it's not surprising that Clifford Horwitz, the company's chairman and CEO, takes a wide view of the technology.

"We have had enquiries from the Ontario Provincial Police who have been investigating the efficacy of developing a reader that will allow

them to interrogate any and all tags that might be attached to virtually anything," Horwitz said. "If you want to blue sky, you can take this thing to next year and back again."

In a closed system like the 407 Highway, Horwitz explained, only one billing system is interacting with the transponder on the vehicle, so it can be unique. Retailers, of course, want the same key-chain token that pays for gas to operate in other stores, as well, enabling a variety of linked discounts, contests and other 'loyalty' incentives.

As Horwitz said, "An RFID system represents a decentralized database in and of itself. In other words, you can put an RFID tag on a container, for example, and create a chronology of whatever criteria you want to know about that particular device. You can attach time and date stamps; you can attach temperature tracking; you can attach all kinds of information."

For procurement professionals and materiel managers thinking about RFID, some of the important issues to consider, besides price and durability, are the physical distance over which the tags and readers must communicate, the degree to which surrounding objects interfere with the signal, the speed with which the reader can send and receive information, and the amount of information that each tag will need to hold.

RFID technology promises better value for every taxpayer dollar through better control of assets, precise information about present location and condition, and detailed information about the asset's useful life – from acquisition right through to disposal. Inevitably, in the next few years, we will see big benefits from tiny tags in Canada's public sector. *MM*

Richard Bray is an Ottawa-based freelance writer specializing in the IT sector. He has been published in magazines and newspapers in Australia, the US and Canada. Before freelancing, he worked as a producer, reporter and senior writer for CBC in Toronto.