

## TAGSYS

Tagsys (a former division of Gemplus) has produced RFID tags and readers for 15 years. It claims to be the first to install a library RFID system. That system, at the National Library Board in Singapore, is the world largest with 1.5 million volumes tagged. At least 40 other installations are in place around the world. Tagsys says more than 7 million library items have its tags installed in them.

### Distribution network

Tagsys does not sell directly to libraries, instead it works with distributors. Tech Logic, Vernon Library Supplies, and VTLS are its three North American distributors. A fourth company, Birchard Co., frequently partners with VTLS or Vernon Library Supplies. Birchard is the developer of the EZ Drop book return and carts.

Tech Logic began with materials handling equipment. That early effort consisted of conveyors and sorters that could be interfaced with an automated library system. The first material handling units were installed in 1998.

Tech Logic has a contract to install an RFID system that incorporates North America's largest sorting system in the new Seattle Public Library (Wash.). The system will have a 40-bin sorter. The company also manufactures a book return that incorporates a Tagsys reader and interfaces with its materials handling equipment.

Vernon Library Supplies is a distributor for ID Systems' EM products, Ketec RF products, and Tagsys RFID products. It uses the same Tagsys products as the other distributors, but it configures the systems with self-check-out units and software of its own design.

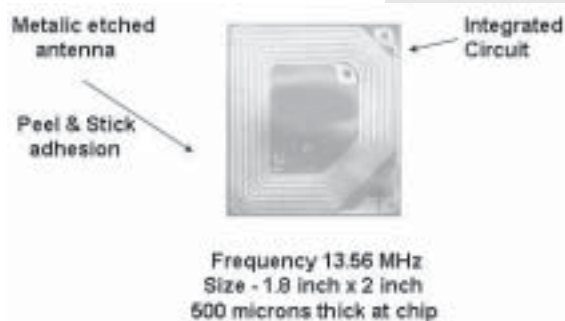
VTLS is the only automated library system vendor to offer an RFID system. It has set up a division known by the name VTrax to target not only its own customers but also those of other automated library system vendors. It sells its products in North America, Europe, and Asia.

Each Tagsys distributor has developed a considerable amount of software around the Tagsys RFID products, including software required for the interfaces to automated library systems (so each system operates differently).

### Tags

Tagsys tags are 1.8 by 2.0 inches in size for books and slightly smaller and round for media. They conform to the 13.56 MHz standard and are passive. The 74-bit read-write tags have 40 bits of lockable memory that can't be overwritten. Thirty-three of the remaining bits may be changed.

The 74<sup>th</sup> bit is a theft bit that indicates whether the item is checked out. This theft bit avoids passing



A Tag.

information back and forth between the RFID system and the automated library system's database, which Tagsys claims may take too long to catch a patron removing items that have not been charged.

RFID tags also are available for patron cards to control access to the patron self-charging or patron self-check-in station. Tagsys also manufactures a read-only tag.

### Converter

The Tagsys converter is called a programming station. Using a standard scanner, the barcode is read and its data is automatically programmed on the tag of the book placed on the programming station.

VTLS offers rentals on the programming stations. It also provides conversion services or assists a library in finding a contractor to do the conversion.

### Staff workstation

The staff workstation is multipurpose: it can be used for tagging, checking out, checking in, renewal, and determining the status of an item. The staff workstation can be placed on a desktop or mounted in the desk. A stack of books can be placed on the platform for simultaneous charging and setting of the theft bit to the off position.

The database of the automated library system is updated online. A receipt printer is available as an option.

### Patron self-charging stations



VTLS Patron Self-charging Station.

Tagsys does not produce patron self-charging stations, preferring to let its distributors select one from a third-party vendor or manufacture their own. As the RFID system is SIP2-compliant, so only minor work by the distributor is required.



Vernon Patron Self-charging Station.



Tech Logic Patron Self-charging Station.

Some self-charging stations available from the North American distributors have both a scanner and a swiper for reading barcodes and magnetic stripes on patron cards. The check-out pad allows materials to be placed on it one at a time or in a stack. The station reads the smart labels, records the transaction, and issues a receipt. Checking out a book also deactivates the security mechanism embedded in the tag.

Tech Logic manufactures two patron self-charging stations. The newer of the two is called the Combo. It has a second screen at circulation so that staff can see what the patrons are seeing when they contact circulation with problems. The unit also may be used for patron self-discharging.

## Exit sensors

Tagsys manufactures the components for exit sensors but not the shells. A distributor can choose materials and colors to offer libraries.

The exit sensors are sold in pairs that are independent of other pairs but also have overlapping protection with other pairs for additional security. Any item that has not been charged is detected and an alarm sounded or a gate locked.

Since a theft bit is in the tag, no need exists for interfacing the exit sensors with an automated library system. At the option of a library, the exit sensors can be interfaced with the automated library system and the information captured by the exit sensors transmitted to the automated library system.



VTLS Exit Sensors.

## Bookdrop readers

Tagsys does not manufacture a bookdrop but supplies a reader that can be installed in a bookdrop. Vernon and VTLS have partnered with third-party vendors to provide the units, and both have developed software to interface with automated library systems using the SIP2 protocol.

Tech Logic manufactures its own unit. In each case, the tags are read as the items pass the reader and the status of the items is updated.

As an alternative to a sorter to separate holds from items to be reshelfed, a report of items returned, but not to be reshelfed, can be produced. The report would include items on hold, to be sent to cataloging, or another next action.



Birchard Co's Through-the-wall Bookdrop Reader.

### Patron self-discharging stations

Tagsys does not manufacture a patron self-discharge station. The units offered by Vernon and VTLS interface with the automated library system so the items are checked in at the same time the theft bit is reset.

Tech Logic manufactures its own units, including the Combo unit that can be used for both patron self-charge and discharge. Combo has a second screen at a staff workstation so staff can see what a patron is attempting to do and provide assistance without going to the patron.

### Sorters

Tagsys does not offer a sorter, but its distributors can interface a sorter with the RFID system. Tech Logic manufactures its own, called the Cart Sort System. It consists of a PC that controls the movement of books from a book drop via belt conveyors to a book-processing unit.

A sizing and squaring machine positions the book, a reader obtains the information from the tag and sends it to the automated library system and resets the theft bit, a rotation machine aligns the books, and a book-placing machine sorts and places them spine out on industry standard book carts.

Because each system is custom-designed and built, the price can exceed \$200,000 for a large-capacity sorter.

Vernon Library Supplies plans to offer a sorter in late 2003.

VTLS offers three sorters: a low-end two-bin unit, an eight-bin unit that is not expandable, and a modular, expandable system with three to 254 bins.

### Portable reader



Tagsys Portable Reader.

Tagsys offers a portable reader with a long flexible antenna for reaching high and low shelves without stretching or bending. The antenna can be used for inventorying or for searching for a specific item. It also identifies out-of-place items on the shelf.

The reader can be connected to any kind of pocket PC (such as a Palm Pilot) for interfacing with an automated library system. The portable reader is capable of scanning up to 20 items per second. Up to 64,000 ID numbers can be stored in the reader memory, which is then downloaded to the central database.

The reader has an audible signal to indicate successful item identification. When searching for specific items, downloading the information is possible from the automated library system to the portable reader so the shelves

can then be scanned. The unit makes an audio signal to provide feedback to the user.

### Patron reserve machine

Tech Logic has developed a new unit that allows patrons to pick up previously requested library materials 24 hours a day. It consists of bins of different sizes that deliver requested library materials when the patron enters his or her patron identification.

The Clinton/Macomb Public Library will be the first to install the unit. It will be able to hold material for up to 500 patrons.

### Customers

Tech Logic has sold a total RFID solution to the public libraries in Boulder (Colo.), Clinton-Macomb (Mich.), Eugene (Ore.), Farmington Hills (Mich.), Greensboro (N.C.), Seattle (Wash.), and Topeka (Kan.), among others.

Vernon Library Supplies has sold systems to the Sequoyah Regional Library System (Ga.), Warren-Newport Public Library (Ill.), and the Davis County Community School District (Iowa). A fourth installation was pending as of mid-August 2003. The company was in negotiation with two other libraries at the time this report was completed.

VTLS has 11 installations. They include Hartford County Public Library (Md.), Sarasota County Library (Fla.), New Hanover County Public Library (N.C.), Allentown Business School (Pa.), Jewish Public library (Montreal, Canada), Open University (Malaysia), University Putra (Malaysia), the SOKA University Library (Calif.), and an unidentified Air Force base in the United States.

The customers have Dynix Horizon, Endeavor Voyager, Innovative Innopac, and Sirsi DRA systems as well as VTLS systems.