Automatic item identification using RFID technology is more and more widespread in modern informatics-based library systems. Our company has installed such systems in more than 15 libraries in Hungary (the biggests are Pécs Tudásközpont, Fővárosi Szabó Ervin Könyvtár). Some of the most popular RFID supported functions are self-service borrowing and returning, which is used in several hungarian libraries.
Advantages of intelligent library systems using RFID:

- Exact, up-to-date automatic registry of library members, library usage, library holdings
- Less manual workforce is necessary
- Non-stop opening hours
- Easier control of books stored on the shelves
- Easier and faster to find missing books
- Shorter queuing time for members
- Fewer misplaced books resulting in fewer delays and unfulfilled demands
- Considerably shorter time spent on the inventory
- Detecting theft attempts

Library processes supported by RFID technology:

- Individual identification of library items (books) throughout the library processes and in the storage area
- Troublefree cooperation of the RFID system with the modern integrated library system
- Identification of library members by electronic member card (student ID, RFID card)
- Cooperation of the traditional barcode identification with the RFID and the possibility of gradual conversion
- Store management (data upload, data management, registry) using RFID technology cooperating with the integrated library informatics system
- Inventory and library holdings control using RFID identification
- Expanded opening hours by self-service borrowing
- Self-service return by terminal or dropbox, automatic sorting
- Automatic handling of prebooked items
- Fully comprehensive and automatic theft protection ensured by the system – automatic status change

Labelling, coding

Importing

- Multiple options whether the item is already provided with a barcode in the integrated library system

New items

- RFID tag writing, coding (RFID writer/reader, barcode reading/printing if necessary)
- Placing tags
- Pairing by RFID reader, recording in database

Old items

- Placing RFID tags
- RFID tag coding based on the barcodes
Electronic member card

- Producing RFID member cards with unique design and functions (identification, payment, etc.) equipped with RFID tag suitable to the installed RFID system
- Registering RFID member card, uploading date of expiry and personal data
- Pairing of RFID member card and the library member within the register
- Integrating the additional functions provided by the RFID member card into the integrated library informatics software
- Borrowing and return with the help of a librarian
- Reader identification (student ID, RFID card)
- Identification of books by desktop RFID reader
- Conducting the rental process in the integrated library system (verifying authorisation)
- Manual setting of safety

Self-service rental

- Identification of the reader (student ID, RFID card, barcode member card)
- Identification of the book by built-in RFID reader
- Verification of authorisation, default in return, denying/permitting transaction
- Conducting the rental process – payment and receipt printing
- Automatic setting of safety

Store management

1. Searching
- Preparing checklist in the library software
- Uploading data to the manual reader
- Scanning the given shelves with the reader
- The reader signals (with light and sound) when recognizes an item from the list and removes it from the checklists
- Searching can be continued until no items remain in the checklist

2. Inventory
- Scanning the shelf ID with the manual reader
- Scanning the books on the given shelf
- Uploading the data into the library system
- The integrated library software creates a list of the missing or misplaced items
- Reconducting the inventory process after the potential reorganisation of the shelf

3. Grouped transfer, deposition
- Identification of multiple items to be transfered by hand reader, desktop reader or by the anti-theft gates
- By uploading the data into the intelligent library system the transfer of all the items is done in one step
4. Theft protection

- Theft protection is ensured by the RFID identification tags. All the items carried through the anti-theft gates are identified automatically – even at a great number. The software in the gate alarms with light and sound signal in case a non-borrowed (armed) item is recognised. The doors/gates can be locked, log files can be created on demand. The item causing the alarm can be displayed on a connected intelligent device such as a workstation, smartphone, etc.

5. Dropbox, sorting

- The library can provide non-stop return of books for its members without human workforce. At the dropbox the member identifies themselves by their membercard and after dropping the returned books through an inlet a receipt certifying the return is printed. The process is observed by a professional camera in order to record the condition of the returned books.
- In case the dropbox is connected to a sorting unit, it can sort the books into container according to the preset criteria (library departments, prebooked items, etc.).