

ShaheedRajguru College of Applied Sciences for Women (University of Delhi)

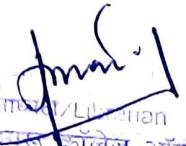
Vasundhara Enclave, Delhi-110096

Proposal for RFID system in Library

The college library program supports learning and teaching for the entire college community; it is a constructivist learning environment, supporting the college curriculum and promoting resource-based learning. It's also a learning environment that provides space (physical or virtual), access to resources, and services to encourage and support student and teacher learning. The college library is already well equipped with the modern automation system and it's attracting the students towards innovative learning skill. But the technologies are changing there is an urgency of change for the new generation learner.

Use of barcodes in library management is still very common. Each item in a library is labeled with a barcode which is used for circulation management. This type of management system always requires a line-of-sight, meaning that when items are borrowed and returned, each item needs to be processed separately. As barcodes are nothing more than 2d-images other means are needed for security measures. This is where electro magnetic (EM) tags come into play. These tags work by creating an electromagnetic field to which the security gate system will react to when an active tag comes close enough to the gate. This is why when an item is borrowed the tag is desensitized and when returned the tag is activated again. Barcodes do not offer any benefits for collection management. Even though check-in units can be barcode based the returned items still need to be sorted by hand before returning them back to their shelves. It can be said that the defining characteristic of barcode based library management is the lack of efficiency.

In libraries there are tasks, such as check-in and check-out, which can be further automated by use of this technology. This will enable better allocation of workforce and funds when library staff can concentrate better e.g in customer service instead of spending their time on mundane tasks. By keeping this in mind, it is clear that the main values of RFID based systems lie in better efficiency, which in turn leads to reduced costs.

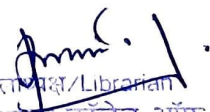

पुस्तकालय/Librarian
शहीद राजगुरु कॉलेज ऑफ
एप्लाइड साइन्स फॉर वूमैन
SHAHEED RAJGURU COLLEGE OF
APPLIED SCIENCES FOR WOMEN
(दिल्ली विश्वविद्यालय/University of Delhi)
वासुंधरा एन्क्लेव नई दिल्ली 110096

Though self-service check-in units can also be based on barcodes, RFID offers better functionality. RFID readers can recognize several books at once whereas with barcodes each book needs to be read separately. By installing a separate sorting machine, which will read the tag information from the returned items and sort them into corresponding carts, it is possible to make the check-in unit even smarter. This will save time as the library staff can straight deliver the books back to their shelves without first spending time on sorting the items. With RFID it is also possible to make it so that the library patrons return their items straight back to the shelves by themselves instead of using the self-service check-in unit. Of course this method works best if a patron only has a few items to return.

Misplaced and missing items are very common problem in libraries. This is also an issue where RFID can be used to make things easier. By using handheld readers a librarian can easily check if a shelf has missing or misplaced items, thus making controlling the inventory much quicker. This could also be made so that the shelves themselves contain a RFID reader which will automatically update the information to the staff. This way it becomes possible to quickly check the state of each shelf from the computer without having the need to separately check every shelf.

The RFID technology can be applied with the present system with the help of middleware, it's concept of source coding. Once the middleware interfaced the existing software will be updated accordingly. After analyzing the facts and figure of the present library a first phase of RFID technology has prepared for the development of the present library.

S.No.	Item	Specification
1.	Self-Adhesive RFID Tag	Sticker type HF RFID tags. The HF tags should work on 13.56 MHz frequency. It should also have the memories starting from 256 bits to 2048 bits. Tag should be compatible with ISO 18000-3.
2.	Security Exit Gate	Two pedestals with internal RFID sensor. Should be Installed at the exit gate of the Library. Width of the pedestal gate: 1.5m. It should be walk through gate antenna system which should read the tags in all three orientations. It should combination of gate antennas and long range reader. It should keep log of all items passing through the gate. It should sound buzzer on Passing of unauthorized items or as per configuration set.


 पुस्तकालय प्रमुख/Librarian
 श्री गुरु जगदीश कलेज ऑफ
 एप्लाइड साइंसेस फॉर वुमेन
 SHRI GURU RAJGURU COLLEGE OF
 APPLIED SCIENCES FOR WOMEN
 (दिल्ली विश्वविद्यालय/University of Delhi)
 एन.डी. एन.डी. दिल्ली-110096
 Vasundhara, Enclave, New Delhi-110096

3.	Staff Station Reader	Connected with desktop computer using USB. Multiple books can be placed on it for scanning at the distance of 40-50cm. It should be plug & play multiprotocol reader system specially design for library application. Both operate width industry standard tags at 10.56 to 13.56 MHz. It should support ISO 15693 & ISO 14443 Tags.
4.	Middleware	Middle wire should be compatible with the exiting software. It should have all the features of RFID system.

Technical Requirement: Self-Adhesive RFID Tag

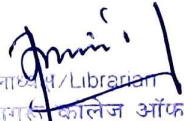
S.No.	Requirement	I/M/O	COMPLIANCE FC/PC/NC/
1.	Sticker type UHF RFID tags	M	
2.	The HF tags should work on 13.56 MHz frequency	M	
3.	It should also have the memories starting from 256 bits to 2048 bits	I	
4.	Tag should be compatible with ISO 18000-6C.	I	

**Explanatory Note: I- Important; M-Mandatory; O-Optional,
FC - Full compliance; PC -Partial compliance; NC-Not compliance.**

Technical Requirement: Security Exit Gate

S.No.	Requirement	I/M/O	COMPLIANCE FC/PC/NC/
1.	Two pedestals with internal RFID sensor	I	
2.	Should be Installed at the exit gate of the Library.	I	
3.	Width of the pedestal gate: 1.5m.	I	
4.	It should be walk through gate antenna system which should read the tags in all three orientations.	M	
5.	It should combination of gate antennas and long range reader	I	
6.	It should keep log of all items passing through the gate.	M	
7.	It should sound buzzer on Passing of unauthorized items or as per configuration set.	M	


**Explanatory Note: I- Important; M-Mandatory; O-Optional,
FC - Full compliance; PC -Partial compliance; NC-Not compliance.**


 नया कालाश/ Librarian
 शाखा: राजगुरु कॉलेज ऑफ
 एप्लाइड साइंसेस फॉर वुमैन
 SHANEEED RAJGURU COLLEGE OF
 APPLIED SCIENCES FOR WOMEN
 (दिल्ली विश्वविद्यालय/University of Delhi)
 वसुंधरा एन्क्लेव नई दिल्ली-110096
 Vasundhara Enclave, New Delhi-110096

Technical Requirement: Staff Station Reader & Middleware

S.No.	Requirement	I/M/O	COMPLIANCE FC/PC/NC/
1.	Connected with desktop computer using USB		
2.	Multiple books can be placed on it for scanning at the distance of 40-50cm.		
3.	It should be plug & play multiprotocol reader system specially design for library application.		
4.	Both operate width industry standard tags at 10.56 to 13.56 MHz.		
5.	It should support ISO 15693 & ISO 14443 Tags.		

**Explanatory Note: I- Important; M-Mandatory; O-Optional,
FC - Full compliance; PC -Partial compliance; NC-Not compliance.**


पुस्तकालयपालक Librarian
शाहीद राजगुरु कॉलेज ऑफ
एप्लाइड साइंसेस फॉर वुमैन
SHARDEE RAJGURU COLLEGE OF
APPLIED SCIENCES FOR WOMEN
(दिल्ली विश्वविद्यालय/University of Delhi)
वासुंधरा एन्क्लेव नई दिल्ली-110096
Vasundhara Enclave, New Delhi-110096