



# **RFID and Electro-magnetic Security Systems at Unisa Library -Report on an investigation**

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# Overview

- ☐ Background information
- ☐ Why an investigation?
- ☐ Cost of tattle tape strips/RFID
- ☐ Findings and Recommendations

# Background information

- RFID system was first implemented in the Unisa Library in 2009
- Library Management took a decision to retain the existing electro-magnetic security system due to budgetary constraints.

# Why an investigation?

- The Unisa Library is using a hybrid system of RFID tags, tattle tape strips and EM security gates (the 3M brand)
- This arrangement is not cost effective.
- An investigation was therefore undertaken to determine whether RFID security gates will address the security requirements of the Unisa Library as part of the Library's Operational Plan.

# Cost of tattle tape strips

## Amount spent from January 2011-December 2011

R2 Strips	DCD2 strips	B1 strips	B2 strips
R19,709.41	R25,945.15	R37,420.96	R54,315.07
R78,837.66	R21,620.96	R7,484.14	R65,178.82
R78,837.66	R43,241.91	R52,389.10	
	R43,241.91		
R177,384.73	R134,049.93	R94,294.20	R119,493.89
<b>Total</b>	<b>R528,222.75</b>		

# Cost of RFID Tags

- Unisa Library Budgeted R9,067,560.00
- The Library Procurement Section is still using the tags from the initial RFID package

# Advantages of EM

- EM security strips (Tattle Tape strips) are virtually impossible to find once they have been inserted into books.
- It has adhesives on both sides of the strip and sticks the bottom part of the two pages together.
- More than one tattle tape strip can be hidden in a book without interfering with each other.
- Tattle Tape strips cannot be blocked by aluminium foil, a person's body, or other books.
- Tattle Tape strips will always function at its peak and outlast any books it has been inserted into because it is hidden and therefore protected.

# Advantages of EM continues.....

- It cannot be scratched, written on or torn.
- EM security has been around for more than 35 years (**3M**).
- It has outlasted and outperformed all other types of security systems which have been tried out in sub-Saharan Africa.
- It is an old technology, it is a highly trusted technology which has been modified and fine-tuned to operate in close proximity with the latest electronic equipment, including RFID.



# Disadvantages of 3M

- EM security systems do not function well when they are too close to computers, copiers, printers and other electronic devices.
- These devices need to be at least 1,2 meters away from an EM security system.
- EM security systems have a limited electromagnetic field in which they can “interrogate” items which move between the upright lattices (pedestals).
- If an EM security strip is passed a little higher than the lattices, the security strip will not be detected.
- An EM system is a “dumb” system. No information is stored on an EM security strip. It is either switched “ON” or “OFF”
- No software installation is needed when the security system is installed – it does not communicate with the circulation system.
- Many false alarms

# Advantages of RFID

- Integrated bidirectional people counter (counting incoming and outgoing clients)
- Green IT (gates is switched of as long as it is not used and switch on when movement is detected)
- Quick mounting device (gates can easily be moved if required elsewhere)
- Gate tracking of item ID to management cockpit in case of alarm (the bibliographical details are displayed on an electronic notice board at the Security desk should a person leave the Library with unissued material).
- RFID Security gates are compatible with SLI and SLIX tags

# Disadvantages of RFID security gates

- It is possible to compromise RFID security by insulating item to block tags signal by wrapping the item in household foil to block radio signal.
- Removal of exposed tags.
- Lack of interoperability.
- Exit sensor fields range are not 100% effective.

# Findings

- We need RFID gates that can detect both RFID tags and tattle-tape strips.
- Purely RFID system will run the risk of significant losses to our collections.
- Hybrid systems are more expensive for libraries compared to a purely RFID-based security system.
- The costs saved by having only RFID-operated security gates will not compensate for the financial losses of stolen books in the future.

# Recommendations

- The Project Team therefore strongly recommends that the Library continue with the hybrid systems of using both RFID tags and tattle tape strips, and consider the purchase of the hybrid type of security gates.

# Project Team Members

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Thank you  
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