

WU Library

RFID and other technical Innovations



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RFID and other technical Innovations

My part (Baubeauftragte):

- Link between library and new building team
 - **RFID (reader services)**
 - **Access control**
 - Lockers
 - Room booking system
 - Library shelves
 - Learning spaces
 - Orientation
 - ...

RFID

Project goals:

- Items should be fitted with RFID-Tags
- Implement self service (all locations)
- Return machine with sorting
- Support for physical inventory

Project advisor:

FH-Prof. Univ.-Doz. Dipl.-Ing. Dr. Ernst Piller

RFID

First decision – frequency: **UHF** – Why?

Future potential for development

Gate - flexibility

Tags – larger range + costs

Stack processing

Physical inventory – good result

RFID – Public Tender

(opening of the bids 7.11.2011)

- **Tags:** 650.000
- **Self-service checkout machine:** 10 floor-standing devices,
2 table devices
- **Return machine:** 2 Terminals, 11 sorting bins
- **Gates:** 1 x fourfold, 1 x double, 8 x single
- **Handheld reader:** 2
- **Security service device:** 2
- **Read-write device:** 17

Winning bidder: bidding consortium **ODIN Lib** (Library RFID solutions)
now: [SmartFreq Kft.](#)
contact person: István Udvardy-Nagy

RFID Tags

RFID-Tags: ALN-9640 FRWA Squiggle (Higgs3 White Wet)
current: ALN-9740 Squiggle Higgs4

Costs: € 0,11 (excl.)

Data: barcode + AFI status (security)

Tagging of print collections: 9.7.2012 – 26.9.2013

Odin: 584.652 Tags (written)

(monthly service quantity max. approx. 110.000;

22.10.2012: 350.000 media are finished)

Project scope: 672.146 Tags



RFID - Tagging

- https://drive.google.com/open?id=1RXjzfdBkfM_kOrjXhgD4zjIEYsJ-dYwQ

RFID – Self-service checkout machine



- Interface: SIP-2
- Cardreader
- Loan/return/renewal
- View account information
- Stack processing
- Loan receipt (email)

30.7.2013



RFID - Gate

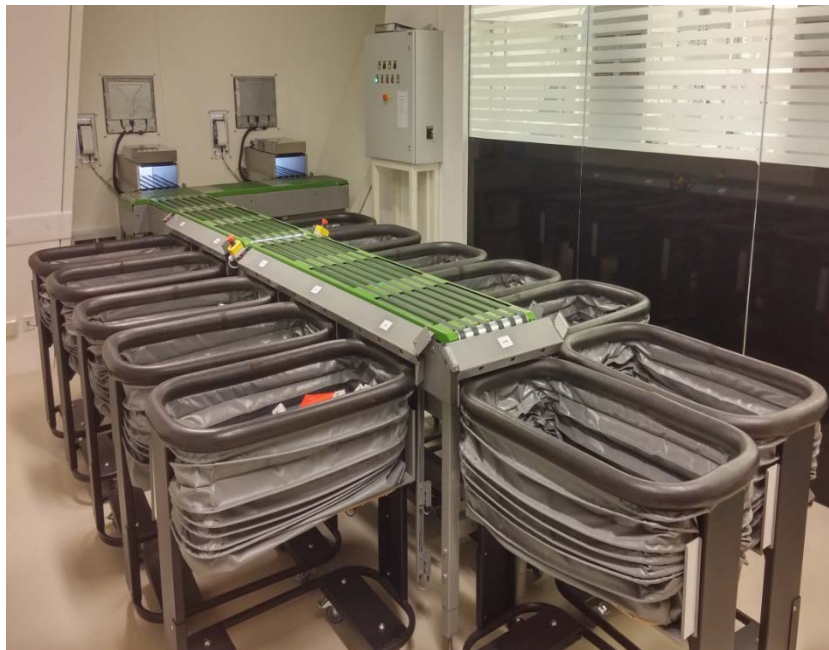


- passages in different widths
- 1 location with antennas in the wall
- Connection to turnstiles
- Logging of alarms (staff →24/7)

RFID – Return machine



RFID – Return machine / Sorting



- Producer: Lyngsoe Systems
- Interface: SIP-2
- Sorting (11 boxes): sublibrary, collection, requested, dump
- No conveyor system to the different floors (1 lift for the transport)

RFID – Physical Inventory



- Precision: approx. 95 %
- Not ideal: metal shelves
- All tags are in same position
- Power settings (for distance)

Payment machine

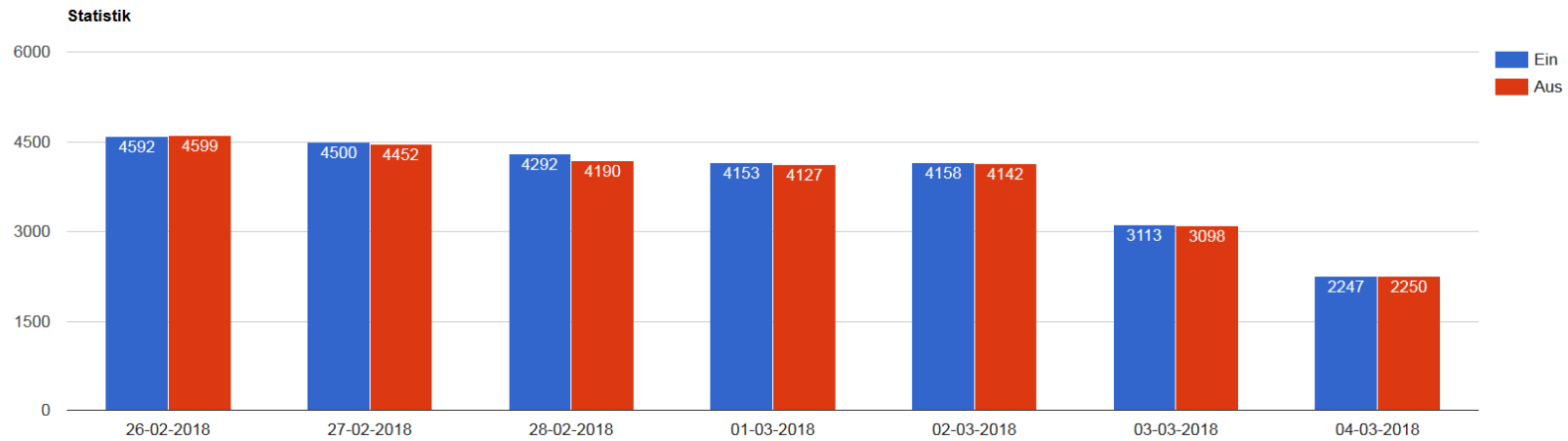


- Producer: Hess (Germany)
- Interface: SIP-2
- Cashless payment (debit card or credit card)
- Only for library related fees and fines (overdue fines, fee for library card, replacement costs)

People counting system

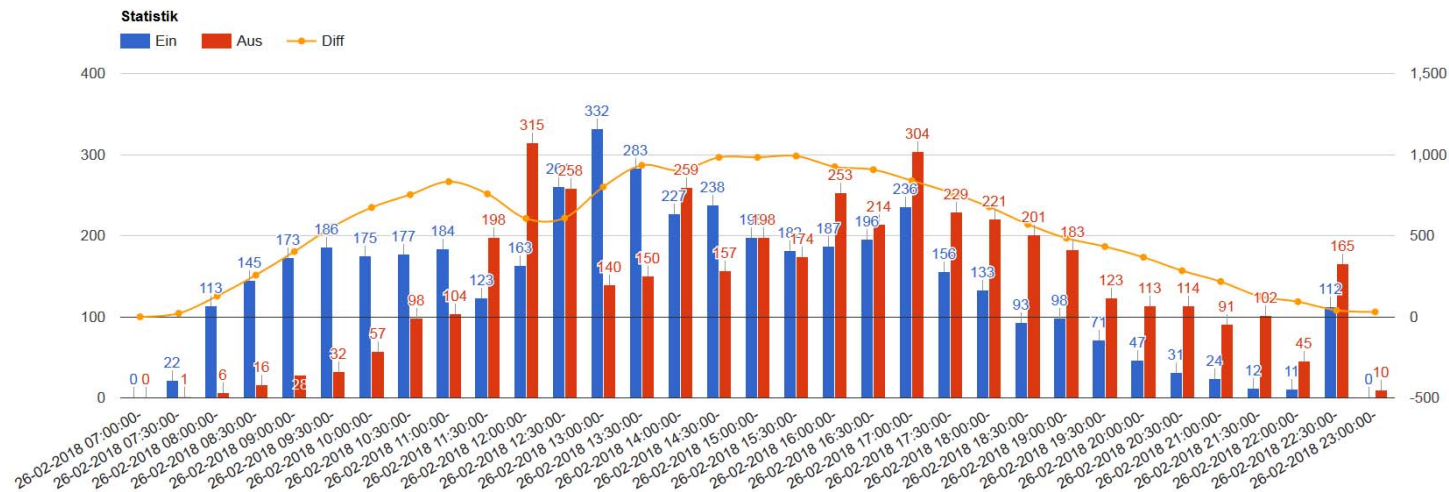
- **Goal: To Answer:** Where are there free study places?
- **First implementation:**
 - Cameras in each floor
 - Counting of movements (to and from)
 - Testing phase and many adjustments (1 year) → **project failed**
- **Second implementation (occupancy rate):**
 - Counting via cameras at the entrance
 - Web Application by SmartFreq (RFID provider)
 - Distribution throughout the day (week, month)

People counting system



Datum	Ein	Aus
1 26-02-2018		4592 4599
2 27-02-2018		4500 4452
3 28-02-2018		4292 4190
4 01-03-2018		4153 4127
5 02-03-2018		4158 4142
6 03-03-2018		3113 3098
7 04-03-2018		2247 2250
8 TOTAL		27055 26858

People counting system



Datum	Ein	Aus	Diff
1 26-02-2018 07:00:00		0	0
2 26-02-2018 07:30:00		22	21
3 26-02-2018 08:00:00		113	128
4 26-02-2018 08:30:00		145	129
5 26-02-2018 09:00:00		173	145
6 26-02-2018 09:30:00		186	154
7 26-02-2018 10:00:00		175	118
8 26-02-2018 10:30:00		177	79
9 26-02-2018 11:00:00		184	80
10 26-02-2018 11:30:00		123	-75
11 26-02-2018 12:00:00		163	-152
12 26-02-2018 12:30:00		261	-609
13 26-02-2018 13:00:00		332	-801

Access control

- 24/7 operation
- 1.500 study places (security)
- Turnstile combined with Gate
- Access card:
 - Student ID card
 - Library card
 - Staff key card



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Thank you!