

**FRR-field-test**  
**Real life test at a  
day care centre**

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# Why a field test?

## Goals



- **Detailed data collecting** about actual day to day usage of the new toilet in the MS day care centre
- Find **degree of users' satisfaction** with the FRR prototype
- Get hints and tips for **future development**

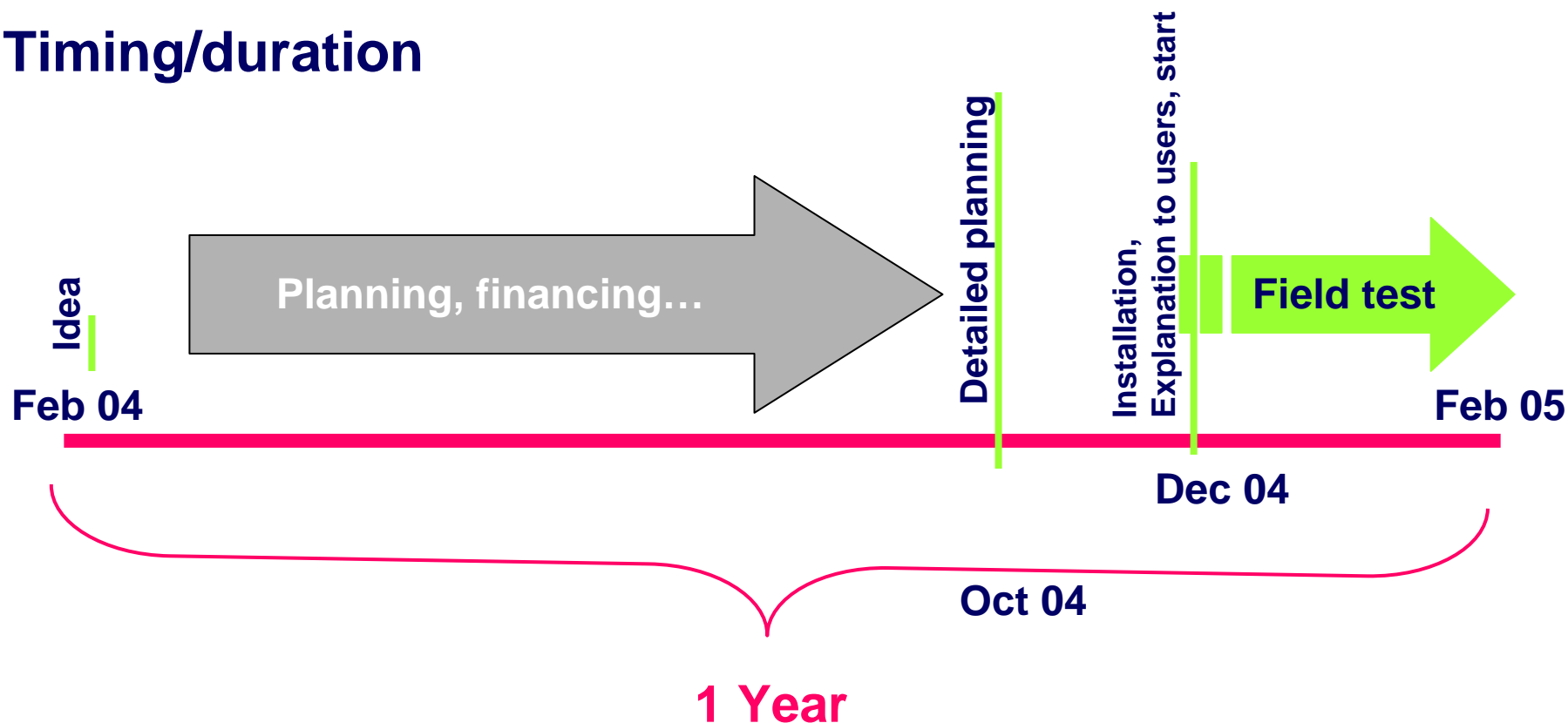
## **Main goals**

### **Desired results**

- **FRR toilet is safe**  
(avoiding failure and accidents)
- **FRR increases independence of the user**
- **FRR supports/disburdens care personnel (SU)**
- **Users (PU) are satisfied with the FRR**
- **Usefulness of the field-test is visible for all involved persons**



### Timing/duration



## Methods used / Data Triangulation

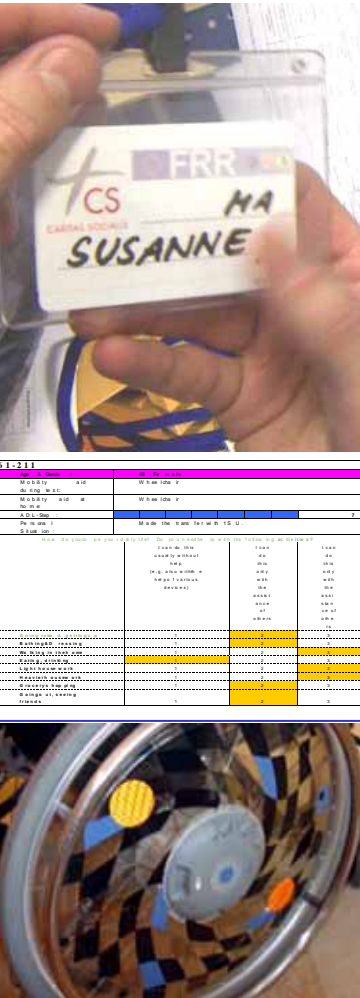
- Participating observation and Field notes (12 days, Nov04-Jan05)
- Interviews with guests and personnel
- Observation sheets for the staff
- ADL-Scale for the guests
- ID cards and LOG FILES
- Questionnaire about satisfaction



61-211					
Age & Gender :		Age Female			
Mobility aid during test:		Wheelchair			
Mobility aid at home:		Wheelchair			
ADL-Score:					
Persons in Situation:		Made the transfer with TSU.			
How do you get yourself dressed? Do you need help with the following activities?					
	I can do this usually without help (e.g. also with a help of various devices)	I can do this	I can do this	I can do this	I can do this
		with the assist device of others	with the assist device of others	with the assist device of others	with the assist device of others
Getting into a chair or bed	1	2	3	4	
Getting into a chair or bed	1	2	3	4	
Getting into a chair or bed	1	2	3	4	
Eating, drinking	1	2	3	4	
Getting dressed	1	2	3	4	
Personal hygiene	1	2	3	4	
Going to bed, getting up	1	2	3	4	
Going to bed, getting up	1	2	3	4	
Going to bed, getting up	1	2	3	4	

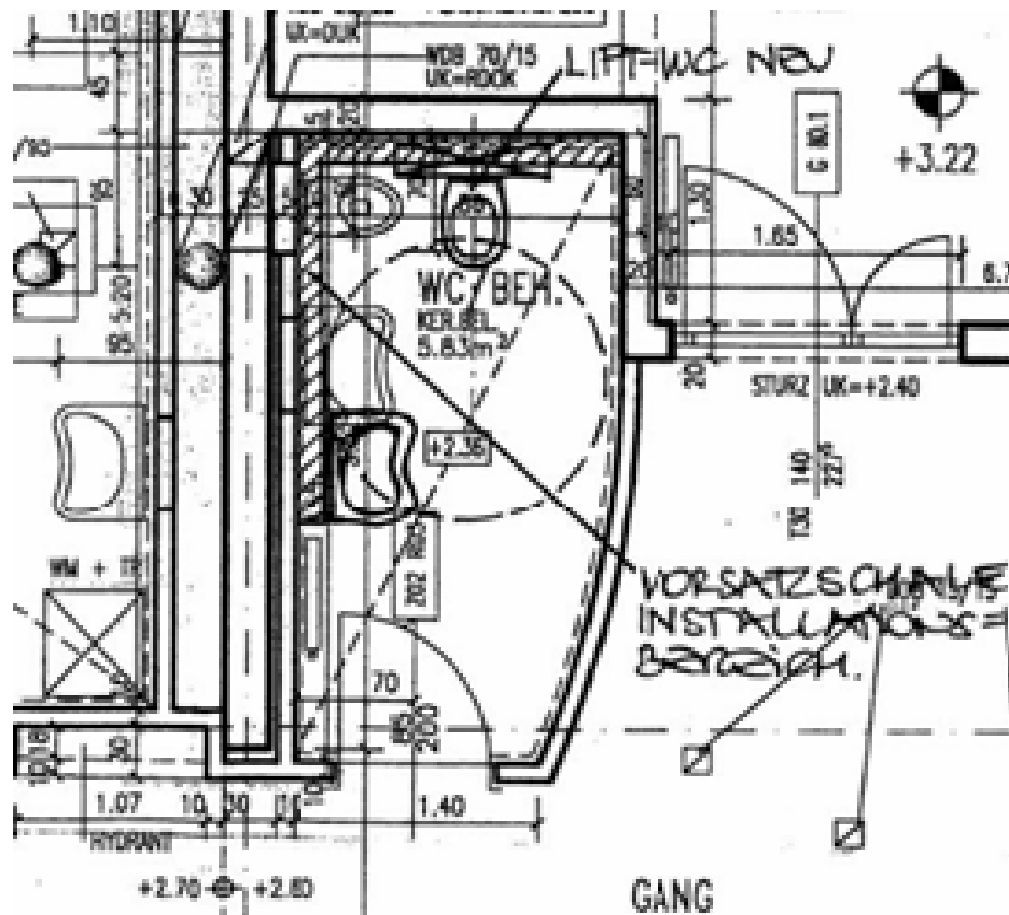
**This presentation: Snapshots from the first data evaluation**  
**extension and further comparisons possible.**

## Participants



- **ID-cards** for all secondary users (SU) and **29 primary users (PU)/Guests of the day care centre**
  - **22 female, 7 male**
  - **between 39 und 79 years (average 57 y.)**
- 23 of the PU were detected by the FRR system, this means there exist logged data about how they did use the toilet.**
- **ADL= average 4,5**
  - **14 used a wheelchair, 3 crutches, 6 rollator, 2 roll-mobil, 4 no aid, 7 transferred with the help from 1 or 2 secondary users to and from the toilet.**

## Toilet – the room



## Components



- Adjustable toilet: Tilt (0 to 6,5 degrees forward) and height of toilet (43 to 75 cm). Two horizontal grab bars which can be folded up
- Hand held remote control (6 Buttons for: height up/down, tilt forward/backward, flush, alarm)
- Module for user identification; 60 FRR ,smart cards‘
- New door handle on the outside of the door (designed by Landmark)
- Sensors for measuring actual height and tilt, status of buttons on the remote control, status of door and alarm system
- PC with software for retrieving and storing of data. Remote maintenance and data transmission over LAN/internet

(Note: Only passive data gathering, no active steering of toilet via the PC)



## First results from the logged data

- Duration: 22 Dec 2004 to 18 Feb 2005
- 39 days (net) numerically evaluated
- 30 FRR cards for users
- 24 FRR cards for ,primary‘ users
- 6 FRR cards for ,secondary‘ users
- 316 toileting events
- 149 (47%) of which can be assigned to an FRR card (and therefore to a specific user)
- Usage of toilet per day
  - 8,10 average
  - 2 minimum
  - 14 maximum

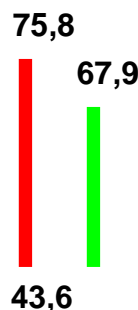


### Range of adjustability of height and tilt

Is the possible range of height and tilt used in the day to day use?

Height of toilet bowl :

- possible adjustability:  
43,6 to 75,8 cm
- minimal used height:  
43,6 cm
- maximal used height:  
67,9 cm

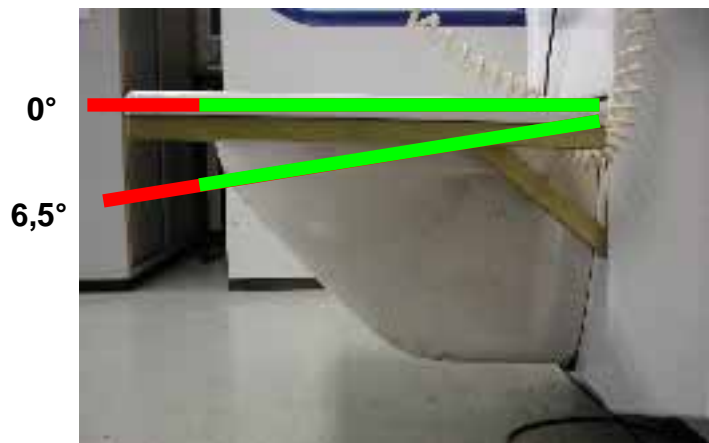




### Range of adjustability of height and tilt

Is the possible range of height and tilt used in the day to day use?

#### Tilt of toilet bowl:



- possible adjustability:  
0 to 6,5 degrees

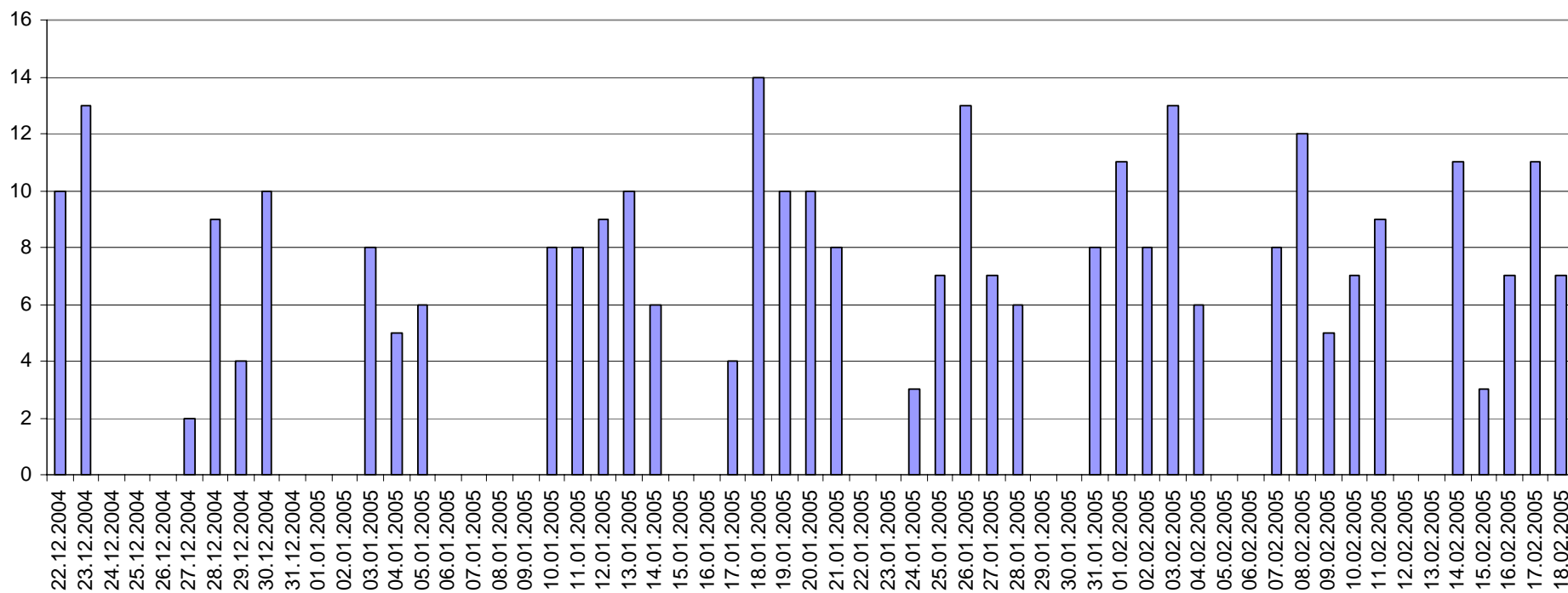
- Minimal used tilt:  
0 degree

- Maximal used tilt:  
6,5 degree

## Usage of the toilet

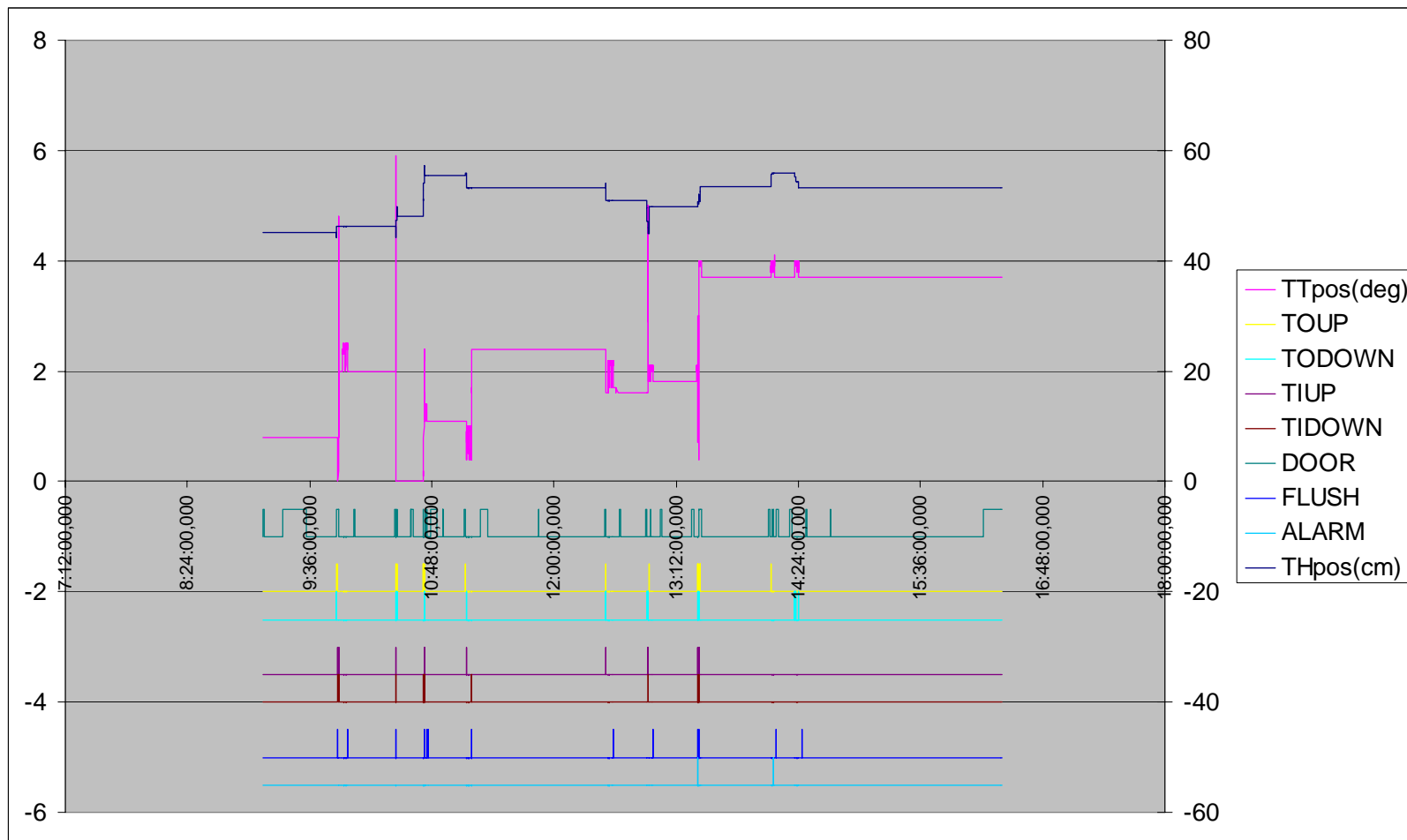
Is the toilet used at all?

Nr. of toileting events (most likely) per day



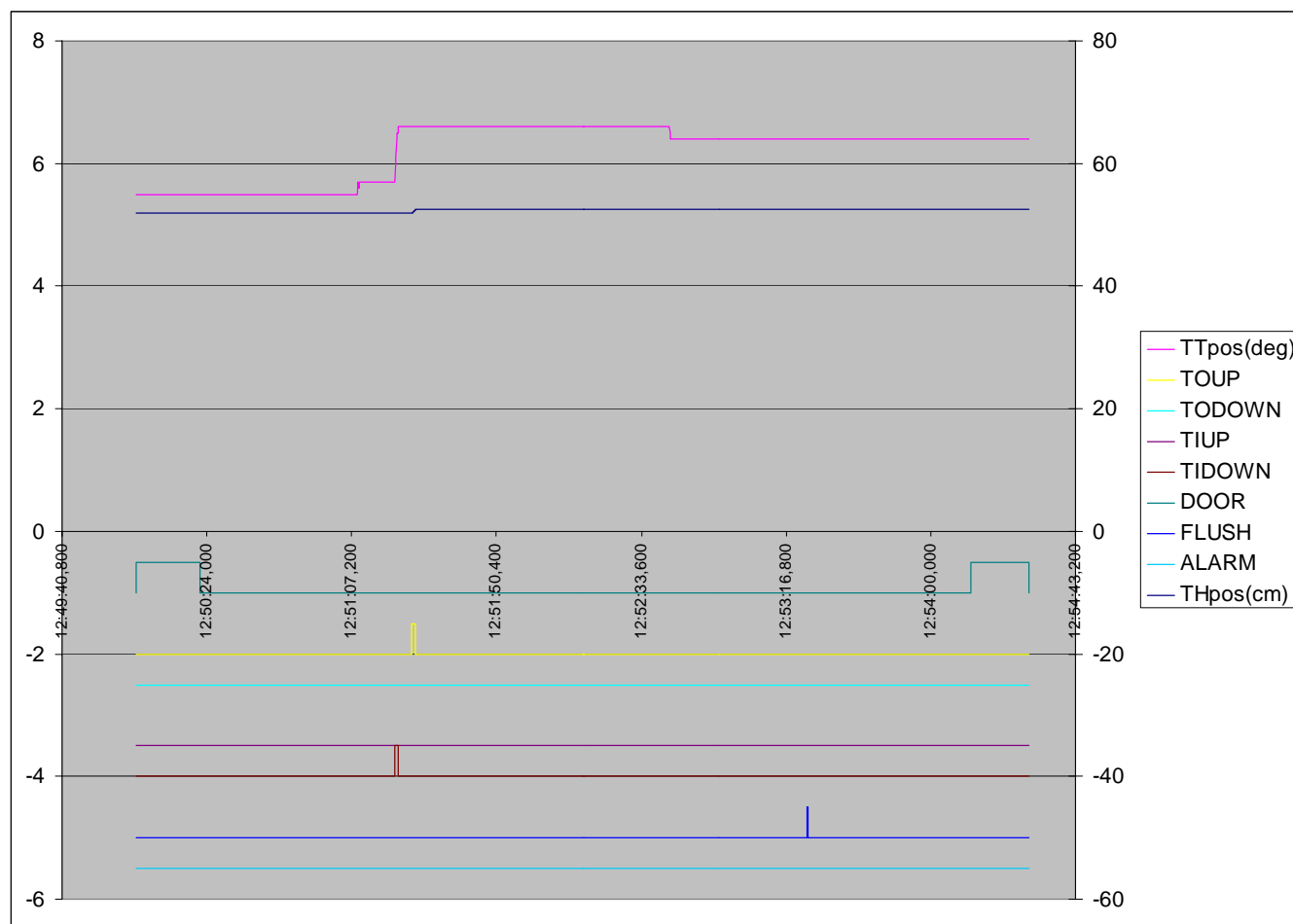
## Example: Data of a day

First impressions; Changes in height (dark blue) and tilt (pink)



## Example: data of a toileting event

First impressions; Tilt is changed, height is not changed



## Info-case, Informed consent & safety

- **Informed consent procedure**  
for PU and SU
- Safety of system





## Training of staff



“Developing Friendly Rest Rooms for the elderly and the disabled people”

FRR Final Conference Vienna, 17<sup>th</sup> March 2005



# Informing guests of day care centre

Informed consent







“Developing Friendly Rest Rooms for the elderly and the disabled people”

FRR Final Conference Vienna, 17<sup>th</sup> March 2005



***„people are very motivated, if they arrive in the morning they immediately ask for their cards. This is unusual... „***





## Door handles: *the strongbox...*



- *Modern*
- *very useful for people who use crutches*

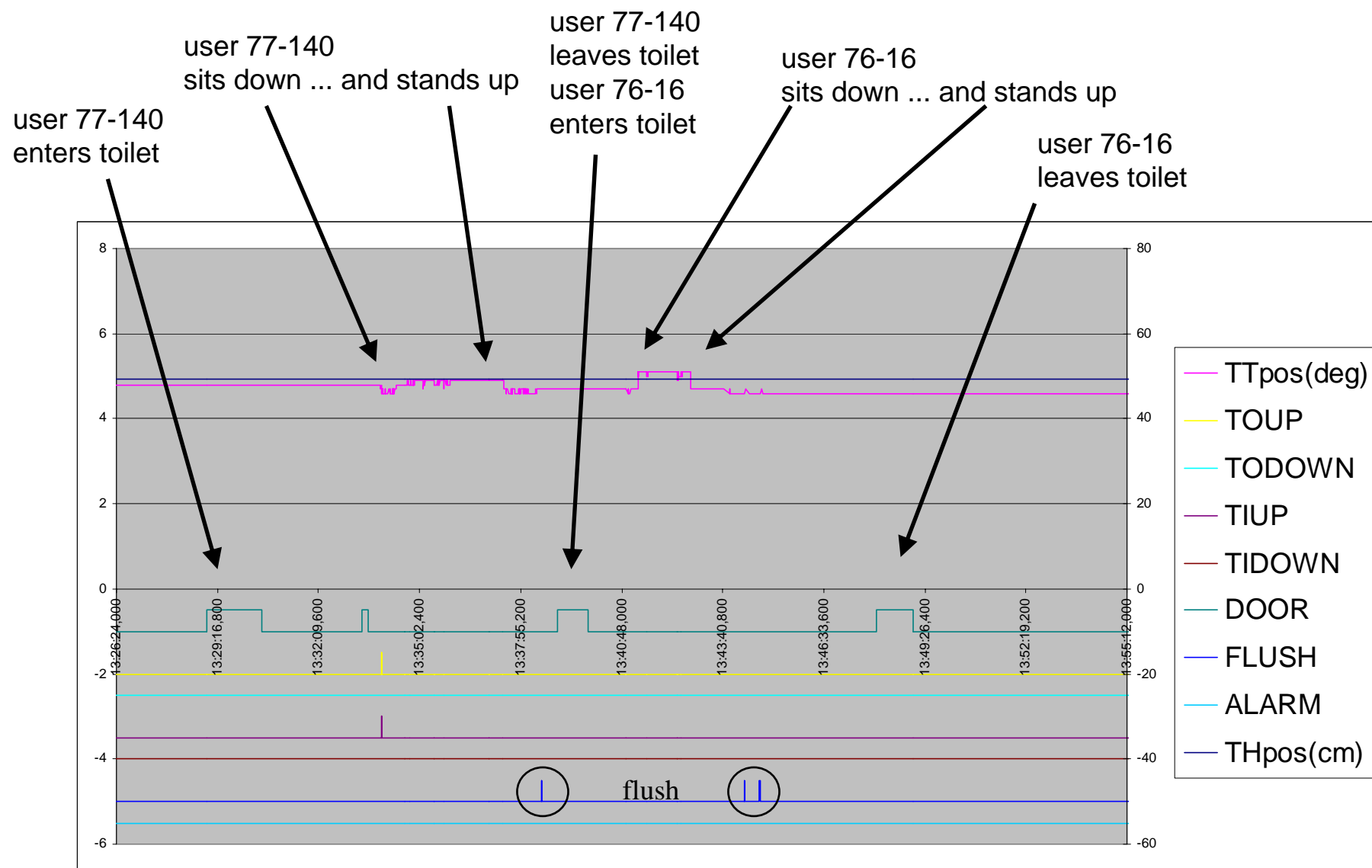
But also

- *not pleasant*
- *too big*
- *„why is it so huge?“*
- *„funny“ handle*
- *„looks like a strongbox“*



## Transfer with FRR: **high costs – great benefit**









***„ I would love to  
take this toilet  
home with me ...“***

**Transfer with FRR: high costs –  
great benefit (3)**





**Transfer with FRR: high costs – great benefit (4)**



## Wash basin: **too big**



## Transfer with FRR (2nd example): **costs too high**





### Adjustability in height/tilt



- Users' feet have contact to the floor = **GOOD**, provides safety, supports usage
- **Easier transfer**, e.g. set it higher for transfer, after that set it lower so that feet can touch floor.
- generally useful



## Hand Held Remote Control

- is generally. „well“ accepted, „*the red button*“...
- more independence (e.g. activate the alarm by oneself)
- to fetch something from the floor

## Needed improvement

- size, manageability, mounting/stability



## Horizontal grab bars



**Too far from each other, too narrow, ideal, too short, too long**

**Best would be: adjustable with fixating mechanism**

## Sum:

**Comparing to main goals and desired results**



- ✓ **FRR toilet is safe (avoiding failure and accidents)**
- ✓ **FRR increases independence of the user**
- ✓ **FRR FRR supports/disburdens care personnel (SU)**
- ✓ **Users (PU) are satisfied with the FRR**
- ✓ **Usefulness of the field-test is visible for all involved persons**



and...**THANK YOU** to the staff of the day care centre and the guest  
for the great teamwork, the trust, the patience...  
for curiosity, courage and warm-heartedness ...