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

FRR Final Conference Vienna, 17th March 2005
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

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
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

- Usage of the toilet chart showing the number of toileting events per day from 22 December 2004 to 18 February 2005.

- The chart indicates the frequency of toileting events with a scale from 0 to 16 events per day.

- Days of the week are listed on the x-axis, and the number of events is represented on the y-axis.
Example: Data of a day

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

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Example: Data of a day

First impressions; Changes in height (dark blue) and tilt (pink)
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Example: data of a toileting event

First impressions; Tilt is changed, height is not changed

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Example: data of a toileting event

First impressions; Tilt is changed, height is not changed
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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, 17th March 2005
Informing guests of day care centre

Informed consent
“Developing Friendly Rest Rooms for the elderly and the disabled people”
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„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*"
“Developing Friendly Rest Rooms for the elderly and the disabled people”
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Transfer with FRR: high costs – great benefit
user 77-140 enters toilet
user 77-140 sits down ... and stands up
user 77-140 leaves toilet
user 76-16 enters toilet
user 76-16 sits down ... and stands up
user 76-16 leaves toilet

user 77-140 enters toilet

user 76-16 enters toilet

user 76-16 leaves toilet

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„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)

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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
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- 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 ...