Draft D6.2-D6.3-D6.4 Summary of pilot results

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Classification: Internal/External

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Brief review of available technical solutions to be tested in the pilots

As described in deliverable D3.2/D4.2/D5.2 (Report on development solutions) the CCE-system is comprised of service and user interface components. Both are including software and hardware components. According to the MeMo-Net concept, the system is designed as a modular system so that packages can be acquired to suit users' personal context and preferences.

The components of the CCE-system can be seen as follows:

- User Interface (including UI hardware and software)
  - Dementia sufferers UI in the living room
  - Dementia sufferers central hub UI
  - Digital corkboard UI living room
  - Medication dispenser UI
- Service (including service hardware and software)
  - Medication dispenser
  - Dementia diary
  - Activity tracking

In Table 3 all components (hardware and software) are listed.

Table 1: MeMo-Net components

User Interface	Function	Hardware/Software	
Dementia sufferers UI living room	Reminder	HW	TV with NetTV
		HW	A device with an OS that is capable of running a joint SPACE application and can communicate to the dementia diary
		SW	Remote application on TV SW
Digital corkboard UI living room	Reminder	HW	TV with NetTV
		SW	Digital corkboard webaccess
Dementia sufferers UI central hub	Reminder	HW	(Android) tablet
		SW	UI app on tablet
		HW	RFID reader
		SW	RFID software
		HW	MeMo-base
Caretaker		HW	Internet enabled device with supportive browser

UI		SW	Remote app for caretakers webaccess
Medication dispenser UI	Medication dispensing	HW	Medication dispenser
		SW	Medication dispenser SW
Service	**Function**	**Hardware/Software**	
Medication dispenser service	Reminder	HW	Medication dispenser
		SW	Medication dispenser output to Diary
Dementia Diary	Activity storage	HW	Database server
		SW	Remote app for caretakers webaccess
		SW	Dementia Diary software
Activity tracking	Activity tracking	HW	Sensor set
		HW	Device with Linux OS
		SW	HomeGateWay
		SW	Dementia Diary software
	Reminder	HW	Sensor set
		SW	HomeGateWay
		SW	Dementia Diary

Methodology used for the tests

In a usability test, representative users run through typical tasks using an interactive product or prototypes. This helps to uncover and understand usage problems. With usability tests, usability engineers uncover strengths and weaknesses, inquire about the acceptance level and ultimately evaluate the usability of a product. Using additional methods such as questionnaires, it is possible to adapt the usability test to the project specific requirements.

Preparation

Define research goals and research questions.
Research goal: verify an acceptable usability of the developed solutions with the support of users from the target group or similar target groups.

Research questions:

- How do the users perceive the usability of the different systems?
- How is the acceptance of the system, given a specific context of use (for example, simulated in a living room lab environment or in a long term evaluation at a users flat?)
- How is the subjective satisfaction of the test participants?

Recruiting test participants

For the recruitment of test participants a document ("screener") is developed that determines the characteristics test participants should correspond to. The test participants' characteristics should be as consistent as possible to the actual users or the target group of the product. For the CCE project, elderly persons suffering from (mild) dementia or mild cognitive impairment are included. The screener document takes this into account.

Due to the fact the elderly persons suffering from dementia are very hard to recruit, the project partners tapped into the expert networks and asked for support. This proved to be a viable solution.

Test participants are usually given an incentive or any other form of appreciation, for example a small gift. This is done after the test sessions.

Writing test guideline

A test guideline is prepared which describes scenarios, questions and tasks that the participants will be working with during the test. The context of use (users, tasks, user environment), the part of the system which should be tested and its core functions are considered in the test guideline as well. To make sure that the study's objectives are

all covered, the test guideline was circulated within the consortium. This helps to include other points of view and get a more complete test guideline.

The most frequent, most important tasks which also accord with the research goals are part of the usability test. If possible there should be a realistic scenario or story so that it is easier for the test participants to emotionally and contextually connect with the tasks.

The individual tasks were chosen by the partners who conducted the pilot studies. UID provided support and advice in choosing and elaborating those tasks.

Collecting data

There are different ways to collect data that helps to identify usability problems and to answer specific research questions. Since there is no "hard" measurable data in qualitative research, mostly different recovery proceedings are used. The resulting data is brought together (so called "triangulation") to get a reliable data base. The following data types are usually collected in a usability test:

Demographic information (e.g. personal data like age, gender, PC knowledge etc.)
Thematic issues e.g. How much experience do you have with the subject? Which attitude do you have towards the subject?
This kind of data is collected in order to understand the context / background of the test participants. Thus, it is for example easier to assess how they will be able to handle the product. If the usability test delivers heterogeneous results, this information is also used to interpret them accordingly.

In the actual guideline for the CCE pilot tests in lab situation the following questions were asked in the introduction interview:

- How old are you?
- What is your marital status?
- Which kind of profession do/did you have?
- Do you currently live alone or together with other persons? If so, who do you live with?
- What are your typical daily tasks?
- How can you remember those tasks or upcoming dates?
    - Do you user certain tools?
    - Do you have a calendar in your flat?
    - How does it look like?
    - What do you use it for?
    - Who adds dates to your calendar?
    - What are typical dates in your calendar?
    - How do you tick off dates that are done?

Questions about the first impression e.g. "How do you like the product?"
These questions are asked to find out how the product affects the test participant at first glance. If it seems hard to use, for example, the user could be discouraged to take a closer look at it later. Moreover these questions serve as „warm up" for the actual usability test. By asking particularly easy questions the test participant gets the

impression that the test session will be easy to manage and that they personally will not be subject of the test.

In the CCE pilot guideline the following questions were suggested to ask during the initial phase of introduction in the lab environment. For the long term evaluation, there questions were not asked.

- What is you first impression? What do you like spontaneously? What do you like less? How do you like the product?
- Do you have an idea what the product could be meant for? (let the test participants describe their ideas, ask for their opinion)
- What do you think of the writing on the screen? (find out if too big / too small / ideal)

Critical incidents

During the test sessions in the lab, the note taker identifies and records critical incidents as well as incorrect and suboptimal (according to the tasks' optimal approach) behavior of the test participant. Therefore, he or she recognizes activities which imply problems while using the product e.g. comments, gestures, facial expressions, etc. A critical incident consists of at least one goal and one activity of the test participant which does not comply with the goal.

Comments

Comments of the test participants during the lab test also deliver important answers to research goals. The note taker decides whether a comment is relevant or not with regard to the research questions.

Metrics

Metrics can be collected as a measure for efficiency. Thus, conclusions can be drawn where (in which part of the product) usability problems occur frequently. The following metrics can, for example, be collected:

- Succes rate - how many tasks were finished independently and without help?
- Duration of processing for single tasks
- Accomplishment - tasks were executed without help, with little help or with a lot of help
    - The accomplishment of tasks was actually collected in the CCE usability study
- Ease of task (five step scale form very easy to very hard)

Final interview

At the end of each test session the test participant is asked to give a total evaluation of the tested product. This is done mostly by using a multi stage scale on which the test participant marks his or her assessment and a following final interview with questions like "What did you like best / least?", "What should be improved in your opinion?" or "Would you use the product on your own?". These questions are aimed at both getting a final evaluation of the product and learning from the test participant which usability problems are most important for him or her.

In the CCE guideline the final interview consists of these questions:

- What did you like best?

- What didn't you like?
- Can you imagine to use devices like you have seen today at home?
- What could be improved in your opinion? What kind of improvements do you wish?
- (Do you feel safe? Would you trust the device?)

Conduction

Primarily, a test run under realistic conditions is conducted. Thus, the test guideline can still be adapted to the product or prototype (and vice versa) if necessary. The pilot test also helps to estimate the duration of the forthcoming test sessions and to reveal discrepancies in the test procedure.
There are also some administrative activities that have to be provided, for example, the form of consent and the receipt for the attendance allowance.
As the CCE pilot test participants suffer from dementia a specific form of consent was prepared (see fig. 2).

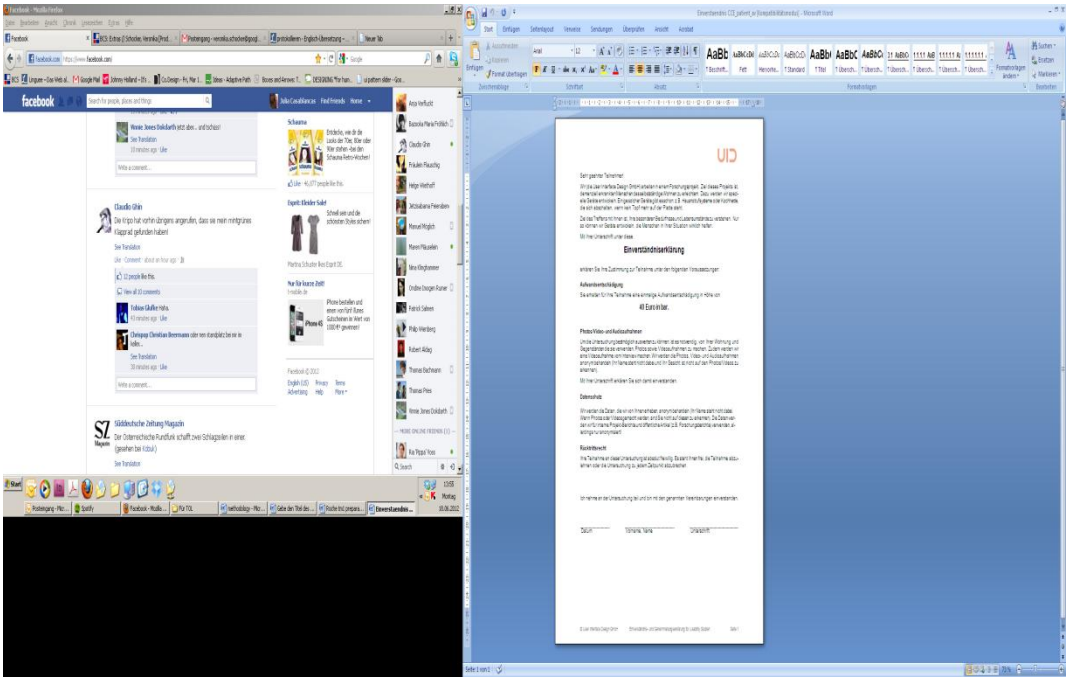

Fig. 2 Example form of consent "Einverstaendnis CCE_patient_av" for German pilots

A typical test session lasts about 30 to 90 minutes (if necessary with a small break) and contains the following steps:

- Welcome participants and explain the study goals, procedure and content
- Guide participants through predefined and realistic use scenarios - participant thinks aloud, moderator poses adequate questions if applicable, which cover the goals of the study.
- Guide participants through possible tasks from the primary operating functions of the pen
- Interview participants and gather their general impressions
- Reward and see off participants

During the test the participants are asked to think aloud. After the observation a set of questions are answered by each participant. Experienced usability consultants moderate all test sessions, research assistants take notes. If necessary, the tests are recorded on video for later deeper analysis.

In the report of each test session the keeper of notes logs:

- usability weaknesses which the test reveals
- important positive aspects which are mentioned by the test participant
- task success (executed without help, with little help or with a lot of help)
- content which is relevant for the research questions
- hints on possible highlight videos

Analysis and report

The data from all of the tests is analyzed and interpreted individually and then summarized, categorized and prioritized. In preparation for this, the minutes are grouped and analyzed in a structured table. Assessments and comments are categorized and prioritized by the severity of the applicable problem.

Objectively collected data will then be interpreted by an experienced Usability Analyst derives recommendations for further actions and optimization.

Component usability testing at Fraunhofer IGD (Germany)

Brief review of the tested technical system

As described in deliverable D3.2/D4.2/D5.2 (Report on development solutions) the CCE-system is comprised of service and user interface components. Both are including software and hardware components. According to the MeMo-Net concept, the system is designed as a modular system so that packages can be acquired to suit users' personal context and preferences.

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In Table 3 all components (hardware and software) are listed. The right-most column indicates which components have been evaluated at Fraunhofer IGD.

Table 2: MeMo-Net components

User Interface	Function	Hardware/Software		Evaluated at Fraunhofer IGD
Dementia sufferers UI living room	Reminder	HW	TV with NetTV	yes
		HW	A device with an OS that is capable of running a joint SPACE application and can communicate to the dementia diary	yes
		SW	Remote application on TV SW	yes
Digital corkboard UI living room	Reminder	HW	TV with NetTV	no
		SW	Digital corkboard webaccess	no
Dementia sufferers UI central hub	Reminder	HW	(Android) tablet	yes
		SW	UI app on tablet	yes
		HW	RFID reader	yes
		SW	RFID software	yes

		HW	MeMo-base	yes
Caretaker UI		HW	Internet enabled device with supportive browser	no
		SW	Remote app for caretakers webaccess	no
Medication dispenser UI	Medication dispensing	HW	Medication dispenser	yes
		SW	Medication dispenser SW	yes
Service	**Function**	**Hardware/Software**		**Supplier**
Medication dispenser service	Reminder	HW	Medication dispenser	yes
		SW	Medication dispenser output to Diary	yes
Dementia Diary	Activity storage	HW	Database server	yes
		SW	Remote app for caretakers webaccess	yes
		SW	Dementia Diary software	yes
Activity tracking	Activity tracking	HW	Sensor set	no
		HW	Device with Linux OS	no
		SW	HomeGateWay	no
		SW	Dementia Diary software	no
	Reminder	HW	Sensor set	yes
		SW	HomeGateWay	yes
		SW	Dementia Diary	yes

Adaptation of methodology used for the tests

The methodology used was defined during a CCE-workshop to develop a uniform approach for the different trials. The general approach is shown in Figure 2, the concrete adaption to the Fraunhofer IGD pilot is described in the following sub-sections.

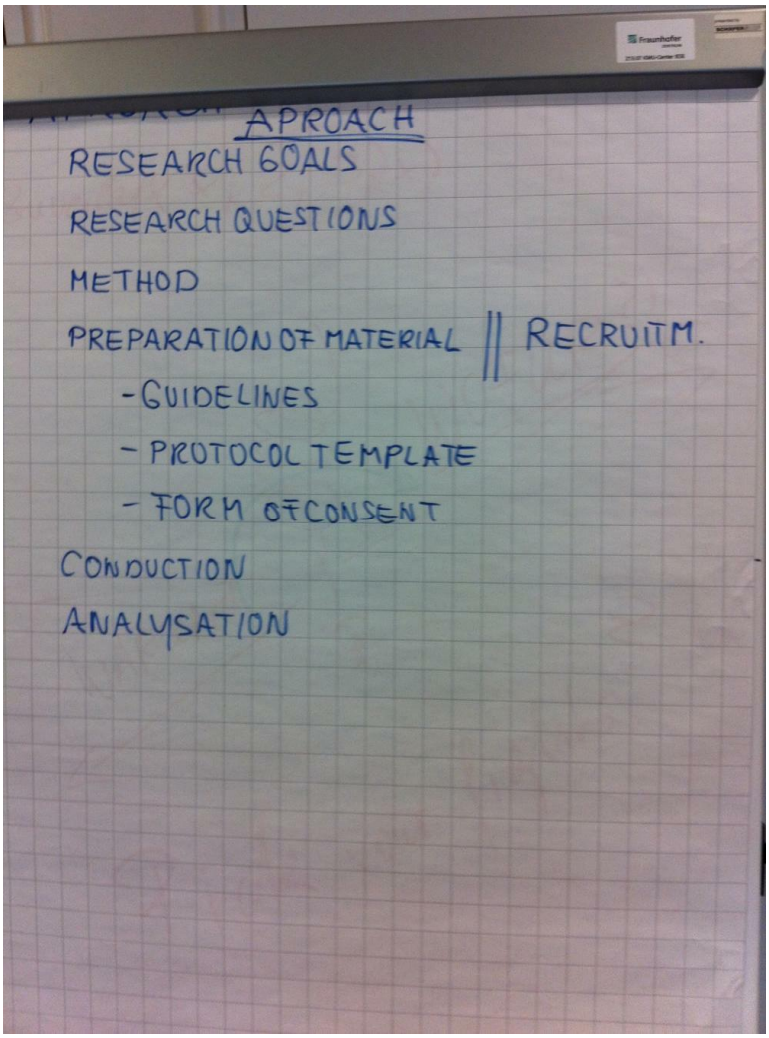


Figure 1: General approach – Draft from the CCE-Workshop

Test Objectives

The focus of the usability test was to get a result on the individual components and their usability as isolated units. The goal was to establish possible issues with the individual parts before tests were done on the overall system. This allowed the distinction between individual issues revolving around separate components vs. system issues revolving around the integrated Memo-Base system as a whole. However, for the tests themselves, the system was meant to provide the user with a realistic setting of the system's usage to show the individual component in a meaningful context for evaluation.

The usability test took place in the AAL-Lab at Frauhofer IGD, Darmstadt. Here, a setup was established to allow the evaluation of components as defined and coordinated with the rest of the consortium during the previous consortium meeting in Kaiserslautern, where coordination aspects between the different test phases have been discussed.

The usability test guidelines (as shown in the Appendix) were developed by Fraunhofer IGD and reviewed by UID before the tests in several iterations as there was considerable user evaluation expertise available for valuable feedback.

Participants

The system was tested at Fraunhofer IGD with a total of 5 persons aged between 70 and 77 years. Two of the participants worked in the IT industry and must be described as technologically adept. At least two other participants are regularly using a computer or a mobile phone. One of the participants just had little experience with technical devices and uses neither a computer nor a mobile phone.

Description of the tested scenarios

Use Case	**Task**	**Task successfully completed**
Use Case 1: User informs himself about today's appointments/tasks	"Find out which appointments are registered for the current day."	4 x without any help of the moderator 1 x with a lot of help of the moderator (Moderator had to intervene)
Use Case 2: User gets reminded of an appointment	"Please explain to me the meaning of the message and check how you can receive more information about the appointment."	4 x without any help of the moderator 1 x with a lot of help of the moderator (Moderator had to explain the functionality)
Use Case 3: User requests detailed information about an appointment	"Please try to find out the doctor's call number."	4 x without any help of the moderator 1 x with a little help of the moderator (targeted questions)
Use Case 4: User gets reminded to take the medication	"Please find out if you have to take medications and how to get them."	3 x without any help of the moderator 1 x with a little help of the moderator (targeted questions) 1 x with a lot of help of the moderator (Moderator had to intervene)

Results and recommendations

Medication Dispenser

Usability Problems

Problem

Instead of pressing the displayed software button, many participants tried to press the hardware button next to the collection tray, which actually opens the device.

Possible Approaches

The hardware button will be placed at a different location in order to prevent misunderstandings caused by the closeness to the collection tray.
The hardware button will be covered.
The software button will be even further visually highlighted.

Problem

The function of the Medication Dispenser was not obvious for most of the participants at first glance. Only upon closer inspection, the participants could make assumptions about the functionality.

Possible Approaches

Visual cues, for example, a red cross will be attached to the device.
The product design of the device will be adapted so that the function will become even clearer.

The font size on the display is partially too small.

Problem

Possible Approaches

The font size will be increased.

Additional Feedback
Most participants rated the dimensions being too large and preferred a smaller device, even though this would mean a smaller amount of medication.

MemoBase & Net TV

The basic function of the device was already visible to all users at first glance. The participants quickly identified the visual interface as a calendar.
The font size was sufficiently big for all participants.
The participants could easily differentiate time-dependent and time independent entries.
The input via the touch screen has been understood by most of the participants at once and did not take much explanation.
Navigating the calendar using the buttons was easy to understand for most users.
All users correctly understood the reminder on the Net TV.

Usability Problems

Problem

The tablet mounting of the current prototype proved to be too unstable. Firstly there is the risk that the tablet falls down, on the other hand, the tablet is turning downward while using it caused by the flexible adjustment.

Possible Approaches

- The tablet must be attached securely to the mounting.

- The flexible adjustment needs to be fixed in order to provide adequate resistance during the usage.
- This has been done prior to the tests at the Fraunhofer IGD by fixing the tablet to the MemoTray.

Problem

Usually, touch screens respond only when the user releases the finger from the screen, in order to allow the user to correct the positioning of the finger. The test showed, however, that participants who have only very rarely or never used a touch-screen before expect a direct response when touching the screen. This led a couple of times to the fact that a participant kept his finger on the screen and nothing happened.

Possible Approaches

To confirm whether this behaviour is universally valid further tests should be performed. According to these tests, the software may already trigger an action when the user is touching the screen.
This issue has been fixed prior to the tests at the Fraunhofer IESE.

Problem

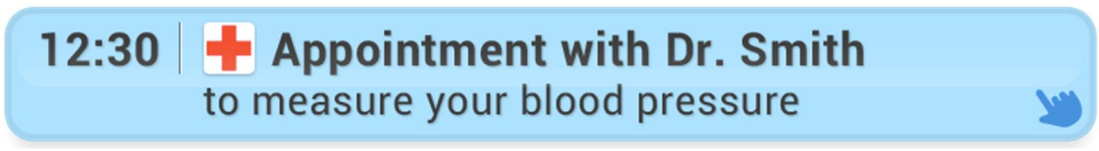
When a participant, who had previously never used a touch screen before, tried to control the device, it revealed that the input via the touch screen is not immediately obvious for everyone. Instead, the participant looked for hardware buttons to control it.

Possible Approaches

The use of the finger as an input method needs to be clearer. For example, an animation could be displayed, which visualizes the touch screen control.

Problem

Some participants did not immediately recognize interactive areas and overlooked the “hand” -symbol, which should have been an indicator for these fields.



Possible Approaches

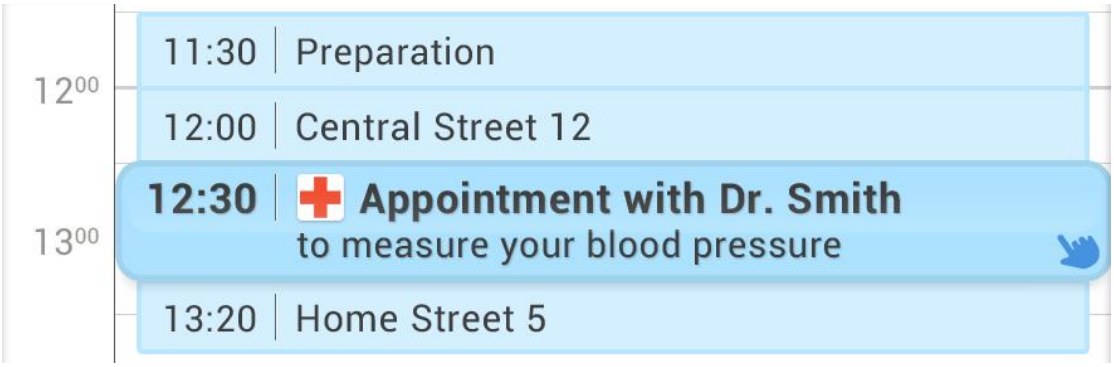
The “hand”-symbol has to stand out even more from the rest of the graphical elements. For example, this could be achieved by a pulsating of the symbol.

Usability Problems Caused by the Current Prototype Status

The following usability problems were detected during the tests, but are mainly caused by the current status of the prototype.

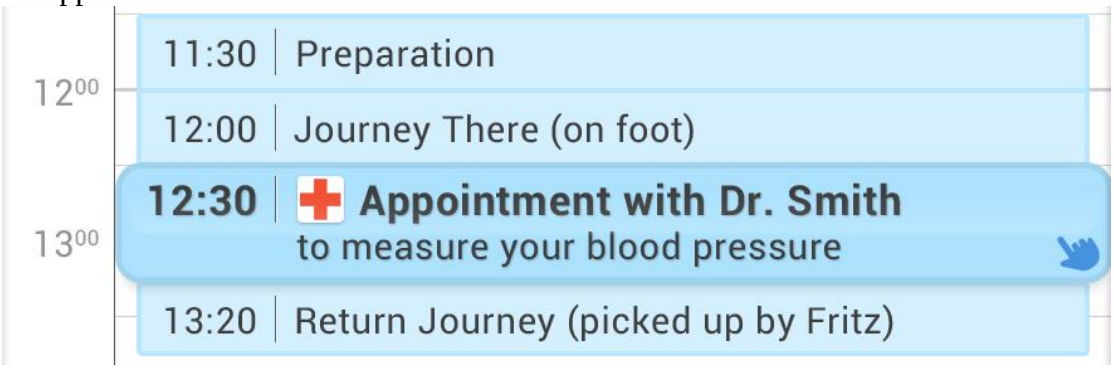
Problem

The current version of the timeline directly shows in blue boxes the destination address of an appointment and also the home address of the user. This led to confusion among the participants, because they did not understand the meaning of these addresses.



Approach

Instead, only “Journey There” and “Return Journey” (with some additional information) should be displayed. The destination address can be viewed by touching the appointment box.



Problem

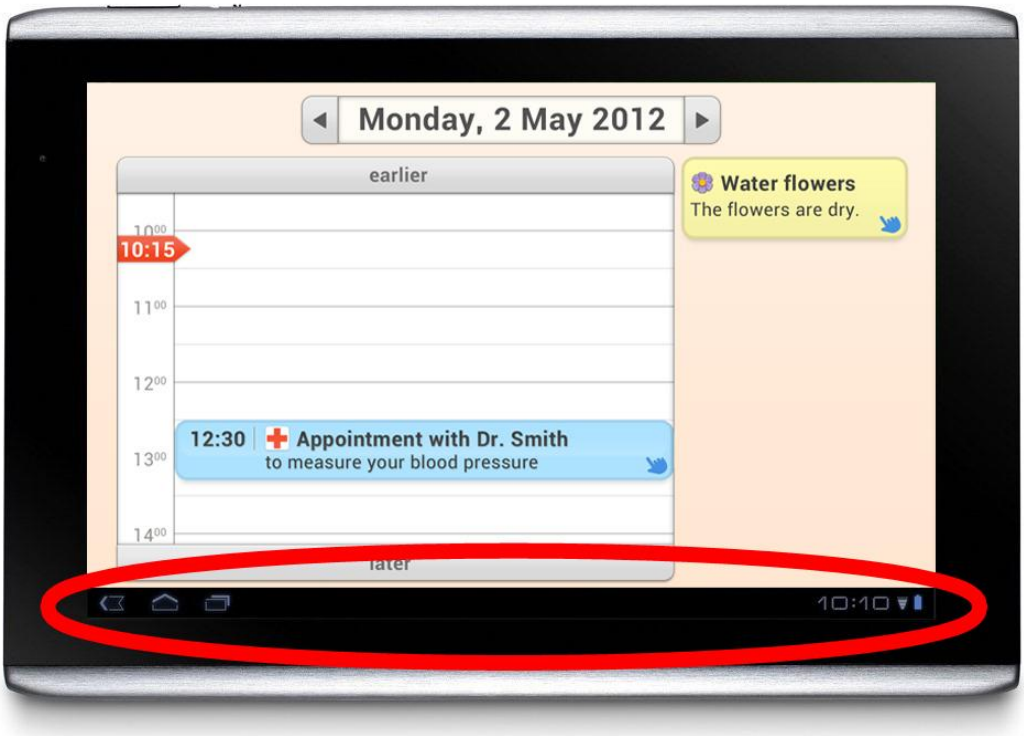
When pressing the “before” or “later”-button of the calendar, the timeline only jumps one hour up or down. This meant that the participants had to press very often in order to scroll through the whole day.

Approach

When pressing one of these buttons, the timeline should jump forwards or backwards about several hours.
This issue has been fixed prior to the tests at the Fraunhofer IESE.

Problem

The permanently displayed control elements of the Android operating system have been mistaken as the control for the calendar.



Approach

To avoid this confusion, the control bar should be hidden. This will occur naturally by updates to newer Android-Versions, which allow hiding the control bar in full-screen mode.

Problems encountered and lessons learnt

Some participants wanted the opportunity to see all appointments of one day at a glance. In the current prototype, the user must scroll through the whole day and cannot choose to view all appointments at once.
One very experienced participant wanted to be able to navigate through the timeline by a wiping gesture.

As a preparation of the tests done at the Fraunhofer IESE, some of these issues have been directly fixed as it was possible within the time between the tests.

System user acceptance testing at Fraunhofer IESE (Germany)

Background – A brief review of the tested technical system

As described in deliverable D3.2/D4.2/D5.2 (Report on development solutions) the CCE-system is comprised of service and user interface components. Both are including software and hardware components. According to the MeMo-Net concept, the system is designed as a modular system so that packages can be acquired to suit users' personal context and preferences.

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Table 3: MeMo-Net components

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Dementia sufferers UI living room	Reminder	HW	TV with NetTV	yes
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		HW	RFID reader	yes
		SW	RFID software	yes

		HW	MeMo-base	yes
Caretaker UI		HW	Internet enabled device with supportive browser	no
		SW	Remote app for caretakers web access	no
Medication dispenser UI	Medication dispensing	HW	Medication dispenser	yes
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Dementia Diary	Activity storage	HW	Database server	yes
		SW	Remote app for caretakers webaccess	yes
		SW	Dementia Diary software	yes
Activity tracking	Activity tracking	HW	Sensor set	yes
		HW	Device with Linux OS	yes
		SW	HomeGateWay	yes
		SW	Dementia Diary software	yes
	Reminder	HW	Sensor set	yes
		SW	HomeGateWay	yes
		SW	Dementia Diary	yes

Adaptation of methodology used for the tests

The methodology used was defined during a CCE-workshop to develop a uniform approach for the different trials. The general approach is shown in Figure 2, the concrete adaption to the Fraunhofer IESE pilot is described in the following sub-sections.

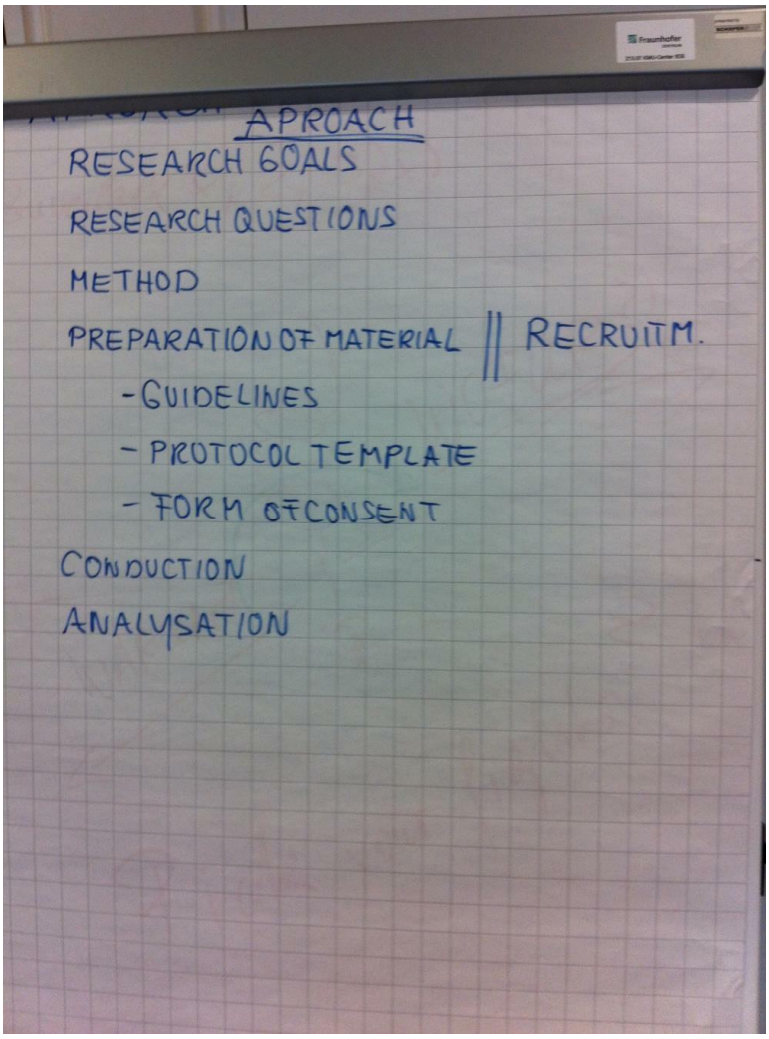


Figure 2: General approach – Draft from the CCE-Workshop

Test objectives

The test goals of the MeMo-Net system have been split up between the different test sites. According to this distribution of work, the pilot at Fraunhofer IESE was concentrated on testing the user acceptance and the usefulness of MeMo-Net.

The general goal of the testing process at IESE was to obtain confirmation that the system meets the mutually agreed-upon requirements related to the characteristics acceptance and usefulness elicited during user requirements specification phase. According to this goal the testing has been done in the Fraunhofer IESE AAL laboratory, an environment that simulates a real living environment as good as possible and that allows the appraisal, whether the candidates would accept the provided services in general and how useful they could be for their personal life.

Research Questions
From the research goals the concrete questions have been derived. The questions are formulated around the services provided to the end user and comprise acceptance and usefulness, in concrete:

Would the user **accept** such a system, in particular:

- The pill-dispenser service
- The calendar-functionality
- The proactive appointment reminder
- The proactive item reminder?

Would the system be **useful** for the user, in particular:

- The pill-dispenser service
- The calendar-functionality
- The proactive appointment reminder
- The proactive item reminder?

Compared to the service list as given on page 20, it should be mentioned that questions on the activity tracking are not explicitly formulated. From the end user' point of view the activity tracking service is considered as part of the dementia diary, supporting the end user in executing all necessary tasks in the context of an appointment. On the others side, to get a valuable feedback on the specific solutions of the MeMo-Net system the questions were split up into the different aspects as the new type of calendar functionality, the support of internal and external appointments and the item reminder.

Test setup

As method for validating the MeMo-Net we chose to perform a survey with the help of a focus group. This allows us to understand the motivations and background of the users and their perception of the system in individual sessions.
Each session was divided into three parts (see Figure 3):

- Presentation: A short movie on the ideas and approaches of the MeMo-Net has presented with the possibility of ask questions. This part took around 15 minutes.

- Demonstration and Scenarios: Depending on the interests of the participant an overview of the trial setting in the lab apartment has been given. In this context the different hardware components of the systems and their principal operation has been explained. After this explanation, the three scenarios (see page 27) have been played in a guided form. The level of active participation during the scenarios was chosen by the trial person. This part took around 45 minutes.

- The trial session was finalized by filling out the prepared questionnaire. This part took around 20 minutes.

Figure 3: Trial method applied at Fraunhofer IESE

Test Environment

To provide an environment as realistic as possible, as evaluation environment the AAL laboratory apartment of Fraunhofer IESE was chosen. The overall apartment consists of five rooms, similar to a realistic apartment:

- kitchen
- bathroom
- bedroom
- living room
- entrance hall

The evaluation mainly took place at the living room, bedroom, and entrance hall. Figure 4 shows the integration of the MeMo-Net system in the apartment. The tray (including the Android tablet), the home gateway, the pill dispenser, and the NetTV were installed in the living room. For the activity tracking component, sensors (motion detection, window / door contact sensors) were mounted in the entrance hall, the bedroom and the living room.

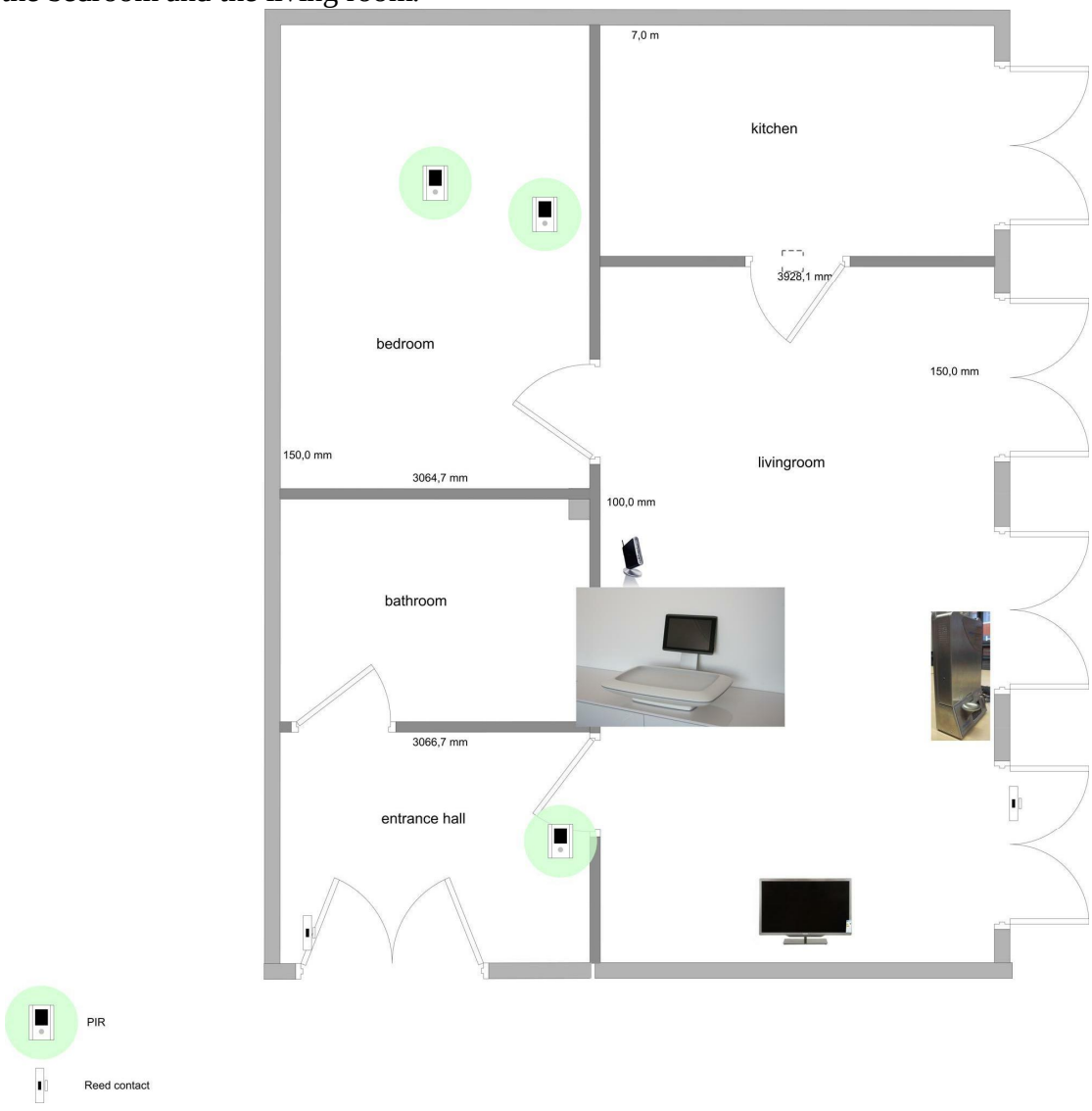


Figure 4: Fraunhofer IESE trial setting

Participants

With the support of a medical organization in Kaiserslautern (ZANR: Center for Outpatient Rehabilitation), seven test persons were selected. The requirements have been the following:

- Older than 65 years old
- Living nearby
- Diagnosis: mild cognitive impairment (MCI) (optional)

One male test person could not come to the appointment. So the number of six test persons was involved in the study.
The youngest test person was 69 years old, the oldest 78 (mean: 73.3).

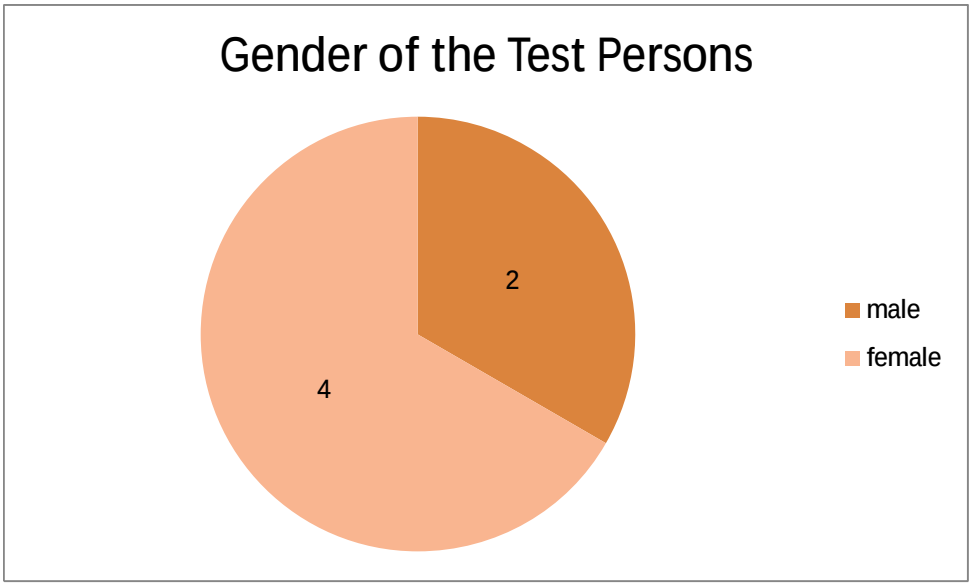


Figure 5: Gender of the test persons

Four female and two male test persons participated, their marital status was quite different (see Figure 6).

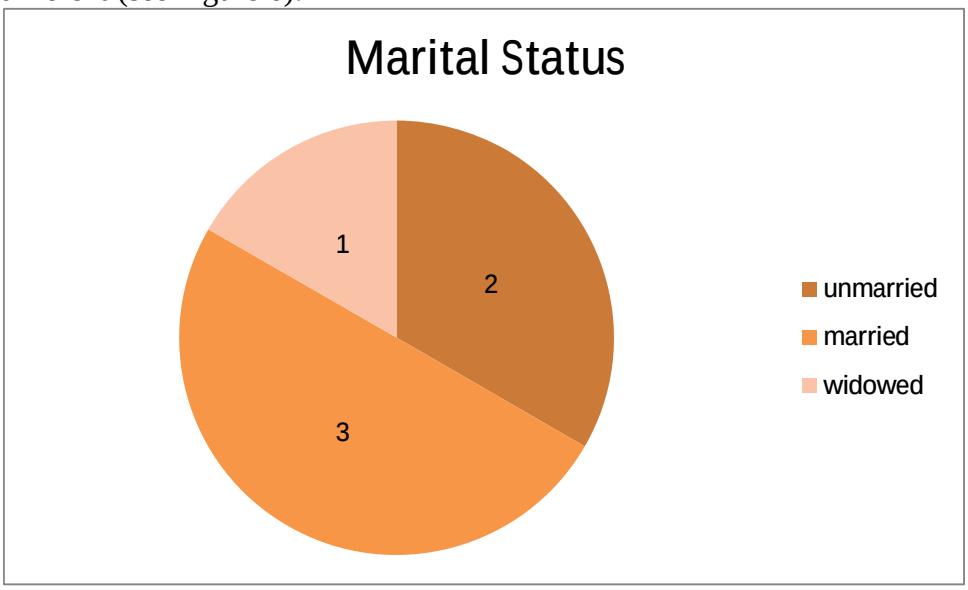


Figure 6: Marital status of the test persons

Four test persons lived together with someone, two were living alone.

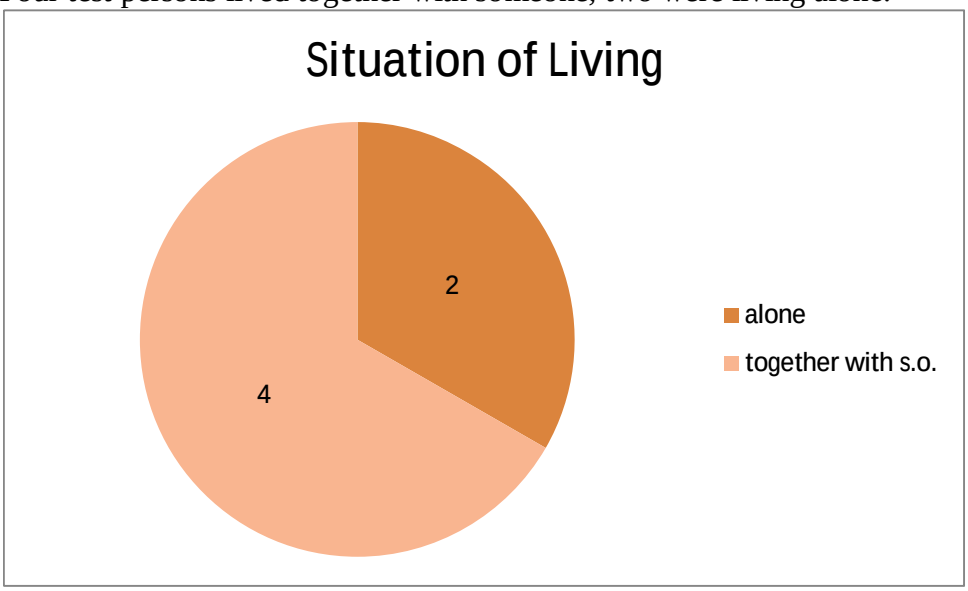


Figure 7: Situation of living of the test persons

The learned professions of the candidates have been very different: commercial employee, assistant medical technician, telecommunications technician, teacher, business economist, and safety engineer.

Instrumentation – Description of the tested scenarios

After an overview and an introduction to the goals and the technology of the MeMo-Net system, the candidates evaluated the system by means of following three scenarios. The scenarios cover all the selected services and include the selected devices. In the following table, the scenario texts are inserted in English and in their original version (German).

Table 4: Overview of the showed scenarios

Scenario 1 (Medication Reminder , English)	o You are sitting in the living room reading your newspaper. o It is time to take your medication (eg Marcumar in the evening). The system reminds you, but you want to bring reading the article to an end and you ignore the reminder. o After a while you get the reminder once again, you go to the pill dispenser, remove the medication and press the acknowledge button.
Scenario 1 (Medication Reminder , German)	o Sie sitzen im Wohnzimmer und lesen Zeitung o Es ist Zeit, Ihr Medikament einzunehmen (z.B. Marcumar gegen Abend). Das System erinnert Sie daran, aber Sie wollen ihren Artikel zu Ende lesen. o Nach einiger Zeit bekommen Sie nochmals eine Erinnerung, gehen zum Medikamentenspender, entnehmen das bereitgestellte Medikament und bestätigen die

	Entnahme durch Drücken auf den roten Knopf.
Scenario 2 (Reminder and Activity Tracking, English)	o The doctor has recommended that you make every day a short nap. o It is 1 p.m., and MeMo-NET reminds you that you should lie down. o But you want to finalize cleaning up the kitchen and therefore you press the SNOOZE button to be reminded again later. o After some time you are again reminded to go to bed. o You go to the bedroom and lay down. MeMo-Net recognizes that you have obeyed the doctor's prescription.
Scenario 2 (Reminder and Activity Tracking, German)	o Der Arzt hat Ihnen empfohlen, jeden Tag einen kurzen Mittagsschlaf zu machen o Es ist 13 Uhr und das System erinnert Sie, dass Sie sich hinlegen sollen. o Sie wollen aber noch vorher die Küche aufräumen und drücken den SNOOZE Schalter, damit das System Sie später nochmals erinnert. o Sie werden daher nach kurzer Zeit nochmals daran erinnert, ins Bett zu gehen.
Scenario 3 (External appointment, reminder tray items, English)	o Every Wednesday afternoon at 4 p.m. you meet friends in a pub in the city. It is a 20 minutes' walk going there. o Before you leave, you should make sure that the windows are closed. o Half an hour before the appointment, MeMo-Net reminds you of the appointment and also, that you should check the windows before leaving, put on the jacket, take with you the wallet and your keys. o You get up and check all the windows, and really one of them is open and you close it. o MeMo-Net recognizes that now all the windows are closed. o You put on the jacket and acknowledge this. o You want to leave the apartment now, but have not pocketed in your keys (they are still on the tray). MeMo-Net reminds you on that. o You go back to pocket the keys and afterwards you leave

	the apartment. o Coming back you put keys and wallet back on the tray.
Scenario 3 (External appointment, reminder tray items, German)	o Sie haben jeden Mittwochnachmittag um 16 Uhr ein Treffen mit Freunden in einem Lokal in der Stadt. Sie können dorthin zu Fuß gehen und brauchen für den Weg ca. 20 Minuten. o Bevor Sie weggehen, sollen Sie darauf achten, dass die Fenster geschlossen sind. o Eine halbe Stunde vor dem Termin, erinnert Sie das System an den Termin und dass Sie die Fenster kontrollieren sollen und beim Rausgehen die Jacke anziehen und die Geldbörse und Schlüssel mitnehmen sollen. o Sie stehen auf und überprüfen alle Fenster, finden auch tatsächlich eines offen und schließen es. o Das System erkennt, dass nun alle Fenster zu sind. o Sie ziehen sich die Jacke über und quittieren dies. o Sie gehen zur Wohnungstüre, haben aber Ihre Schlüssel nicht eingesteckt (sie liegen weiterhin auf der Ablage). Das System erinnert Sie daran. o Sie gehen zurück stecken die Schlüssel ein und verlassen dann die Wohnung. o Nach der Rückkehr legen Sie Wohnungsschlüssel und Geldbörse wieder auf die Ablage.

Instrumentation – Description of the survey structure

The survey was split in two parts in general. Part one focuses on general statistical information like gender, age, marital status, situation of living, and the learned profession. Free questions regarding the actually used calendars were asked, too.
The second part focuses on rating the acceptance and usefulness of the different CCE-system components: the pill-dispenser service, the calendar-functionality, the proactive appointment reminder, and the proactive item reminder.
The possibility to answer the several questions was to rate from 1 (best) to 5 (worst).

Results and Analysis

The filled out surveys were summarized in one Excel-document. The concrete results are shown in the following.
Figure 8 to Figure 13 visualize the result of the initial open questions regarding the usage of reminders or calendars.

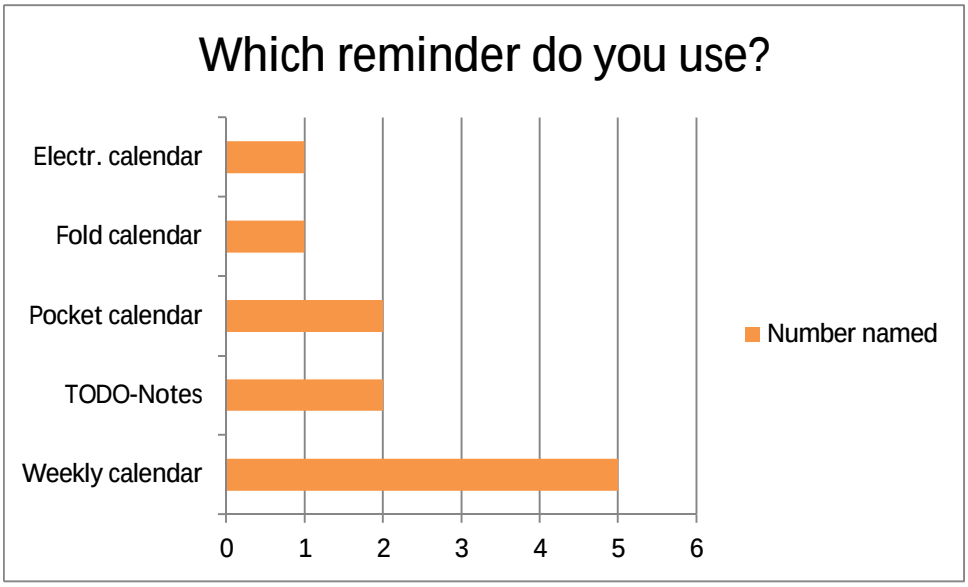


Figure 8: actual reminder types used by the test persons

The test persons were asked what kind of assistance they actually use for supporting not to forget appointments. Most test persons mention that they use weekly calendars. Additionally to calendars “todo”-nodes were mentioned two times.

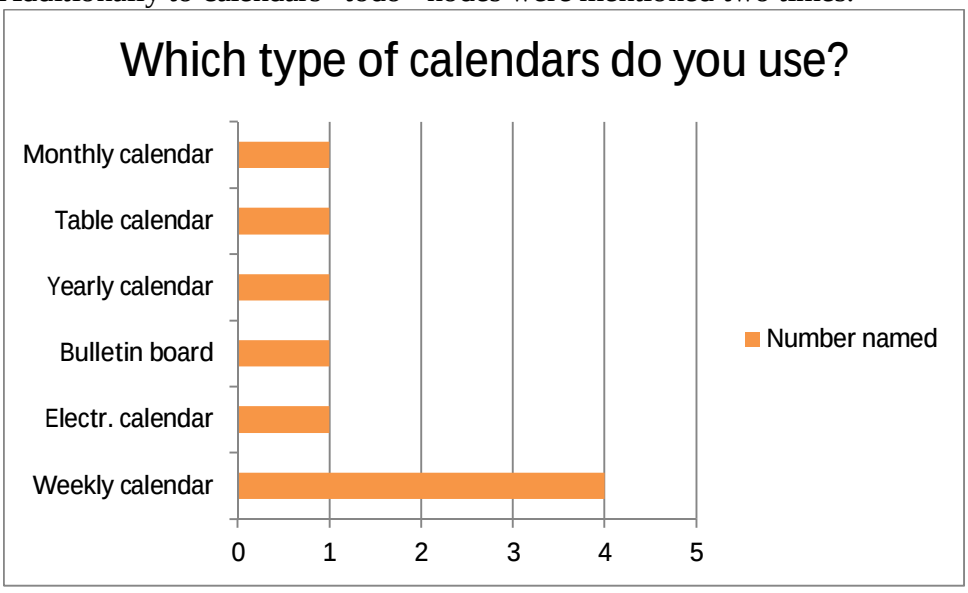


Figure 9: actual calendar types used by the test persons

The following question (1.6.2) confirms the answer shown in Figure 8. The test persons were asked more specific which kind of calendars they use actually. Most test persons named weekly calendars, again.

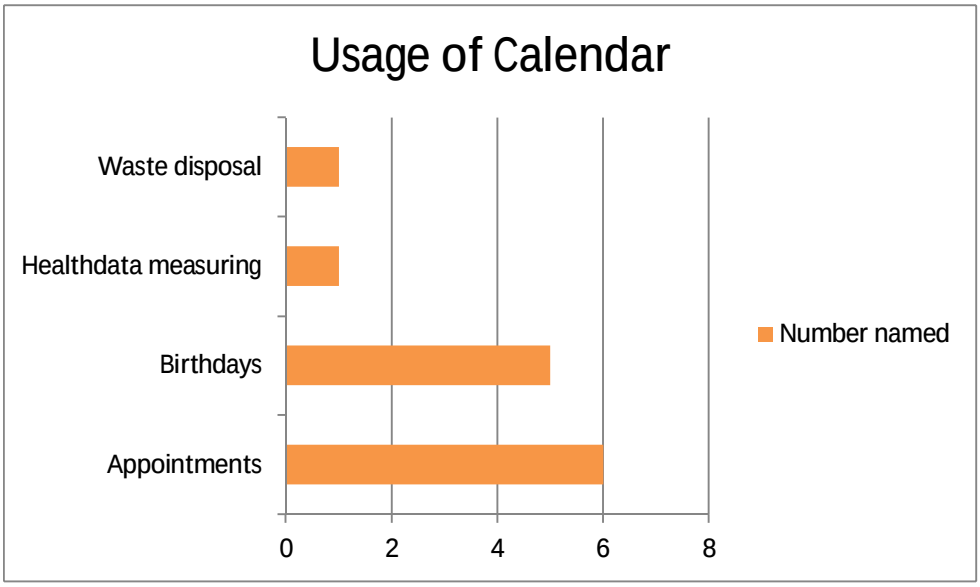


Figure 10: Usage of the calendar

The question of what the main reasons for using the calendar was answered mainly with “appointments” and birthdays by the test persons.

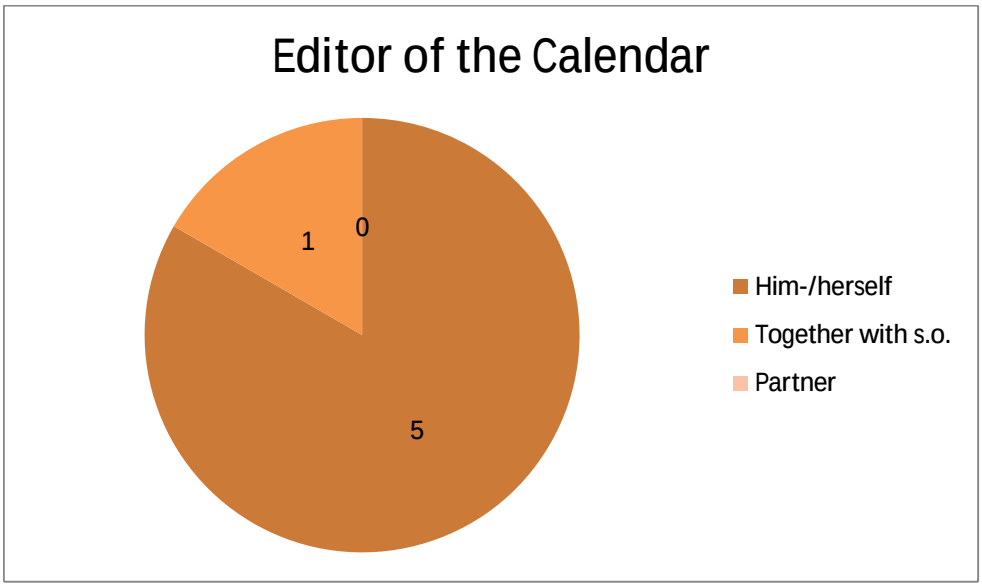


Figure 11: Editor of the calendar

83% of the test persons have their own calendar which is just used by themselves. One test person mentioned that he or she is editing the calendar together with a partner.

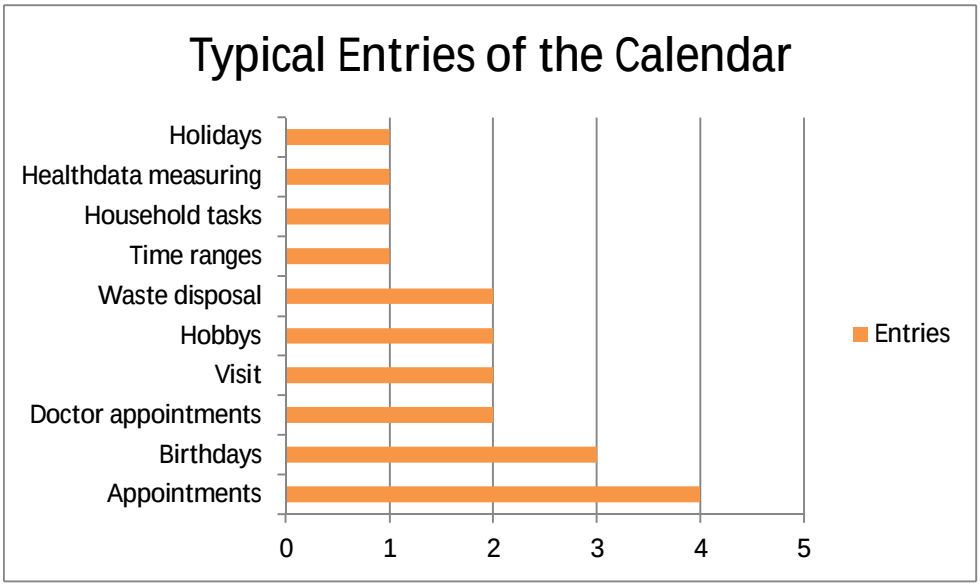


Figure 12: Typical entries of the calendar

The attendees were asked to name typical entries (more specific) of the calendar. Again also the general term “appointment” was mentioned, but also more detailed examples. Health related entries like doctor appointments or healthdata measuring were mentioned explicitly.

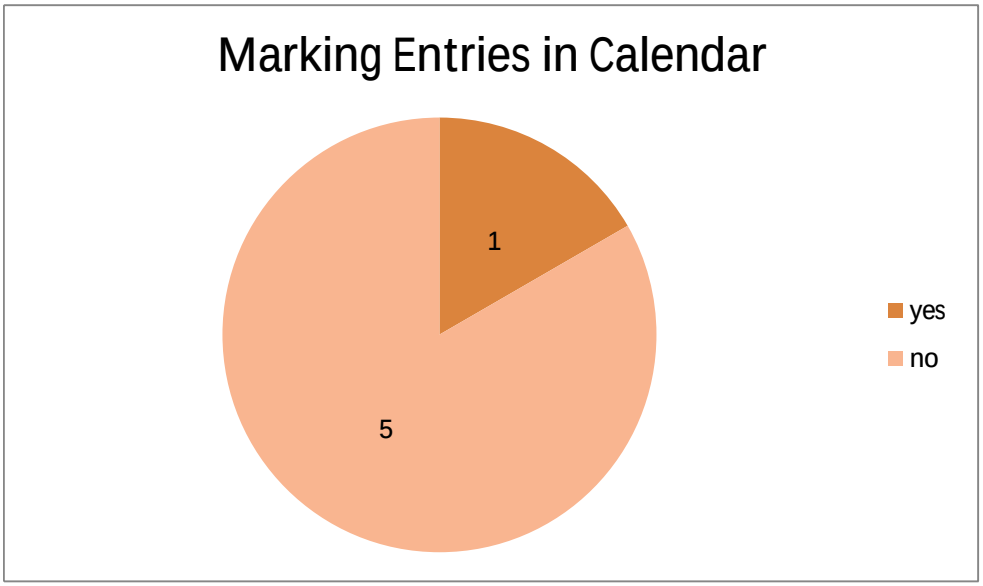


Figure 13: Marking entries in the calendar

Most of the test persons said that they do not mark previous calendar entries. The one positive answer was given by a person who is using an electronic calendar (e.g. MS Outlook).

The following part describes the results of the questions regarding the usefulness and acceptance of the several components.

Results: Pill-Dispenser

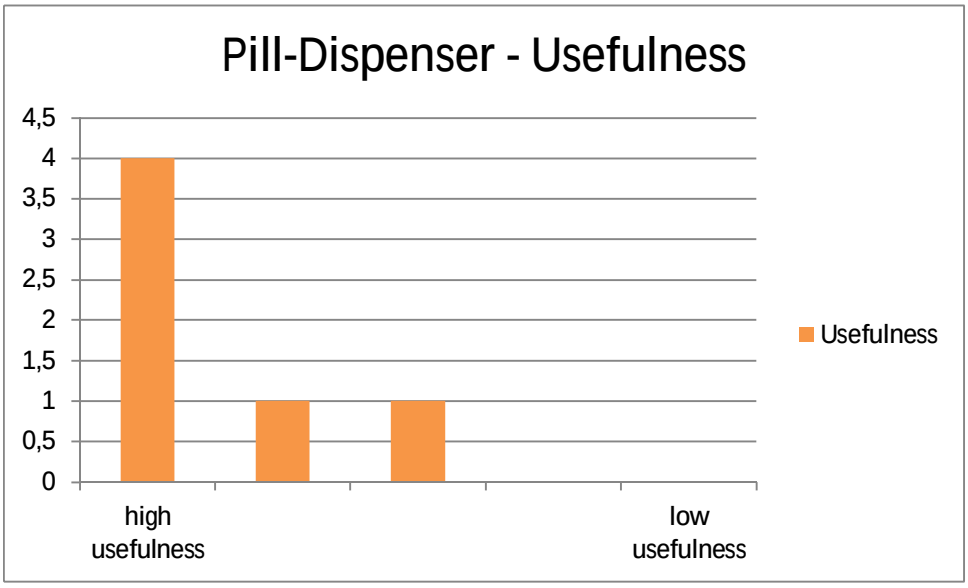


Figure 14: Pill-dispenser – usefulness

The general usefulness of the pill dispenser was rated quite well (mean: 1.5). The concrete question, if the test person would use (accept) a pill-dispenser him- or herself was rated more skeptical (mean: 2.83).

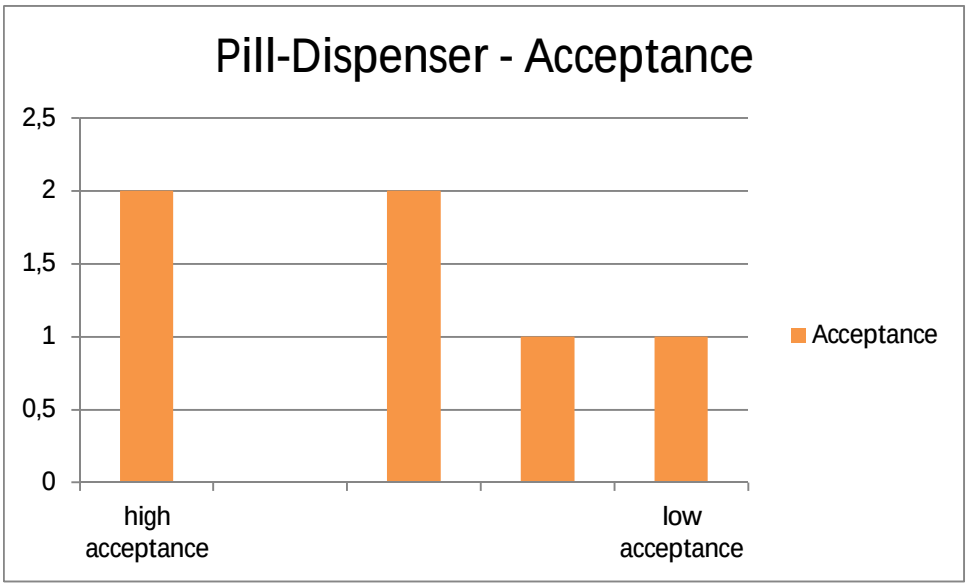


Figure 15: Pill-dispenser – acceptance

A typical comment has been that the pill-dispenser is too big in its actual version and there would be no space free.

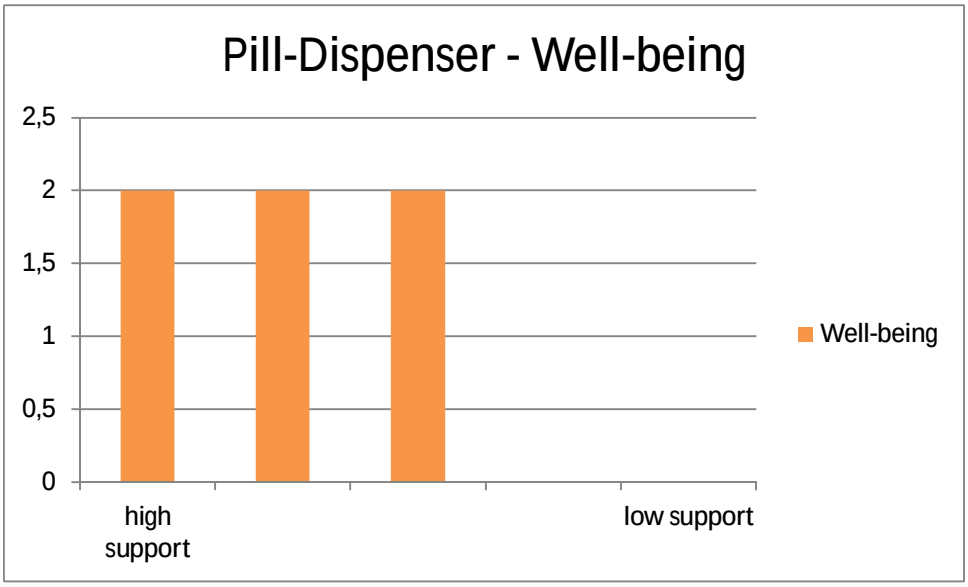


Figure 16: Pill-dispenser – well-being

The influence of the pill-dispenser to the well-being was rated positive in general (mean = 2). One comment regarding the functionality was that the configuration of the pill-dispenser should be easier and possible by the user itself.

Results: Calendar

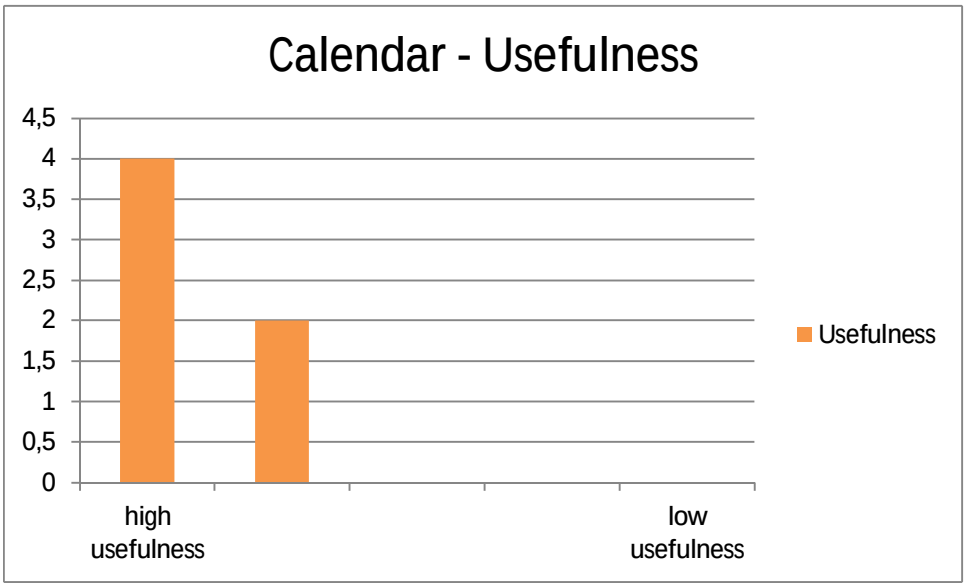


Figure 17: Calendar - usefulness

The results regarding the usefulness and the acceptance of the calendar behave quite similar to the results of the pill-dispenser. The usefulness is rated better (mean: 1.3) than the acceptance (mean: 3.17).

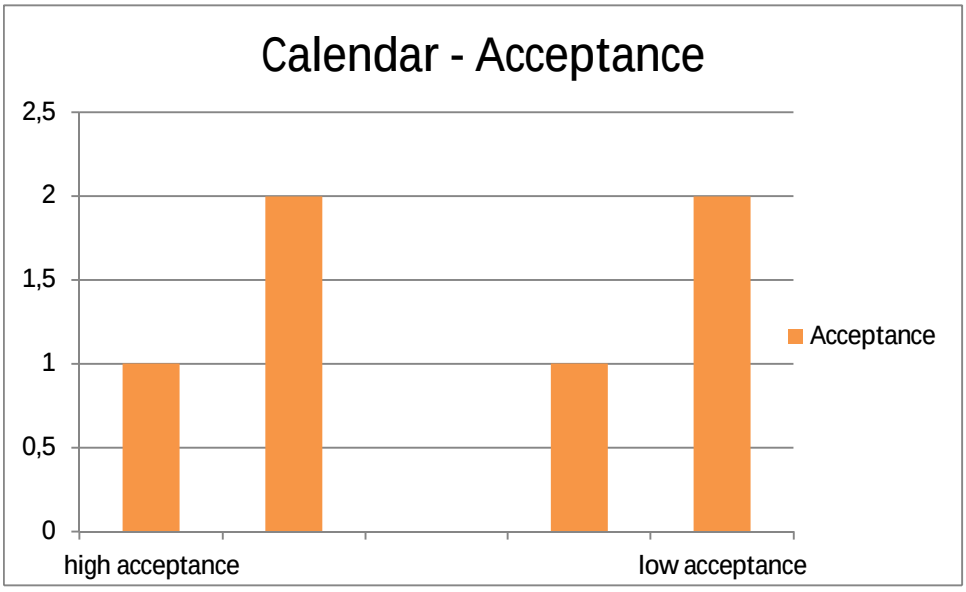


Figure 18: Calendar - acceptance

Comments were that the calendar should be configured only by the person him- or herself and that it might be difficult to learn the usage of the new calendar, when you are used to work with the standard calendar. The electronic calendar might be good for people which are used to work with modern technology.

Results: Reminder Service

The Reminder Service was evaluated in the same way.

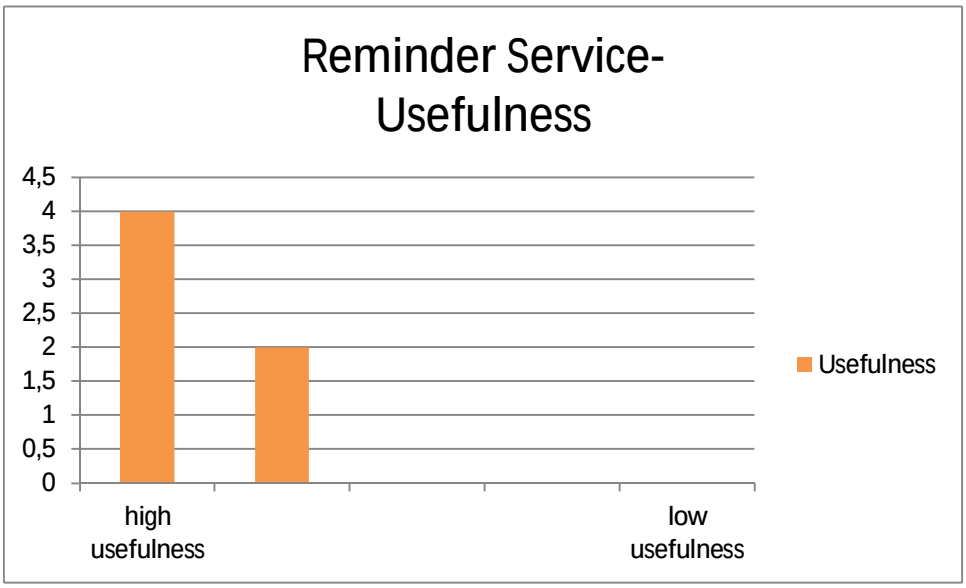


Figure 19: Reminder Service - Usefulness

The usefulness of the reminder service was rated in the mean with 1.3, similar to the calendar functionality. The opinion regarding the acceptance was spread over the whole range of the rating scale. The mean value was 2.7.

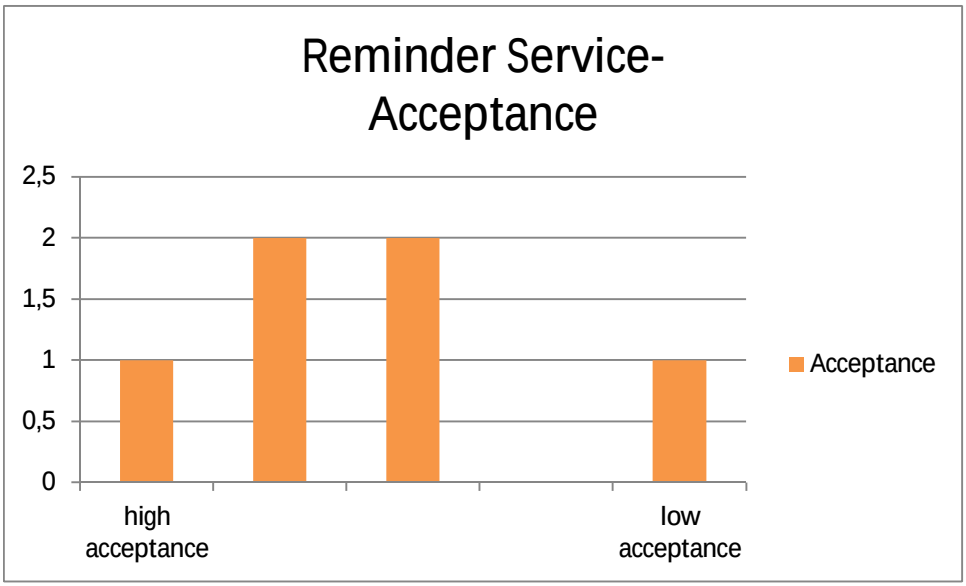


Figure 20: Reminder Service - Acceptance

The influence of the reminder service to the well-being was rated positively with a mean value of 1.8.

Figure 21: Reminder Service – well-being

Comments were that the reminder service should be louder and mobile, and should have more functionalities. Critical comments were that they do not want to be dependent to the system and that they want to train their cognitive skills by having their own calendar in use.

Results: Pick up Reminder

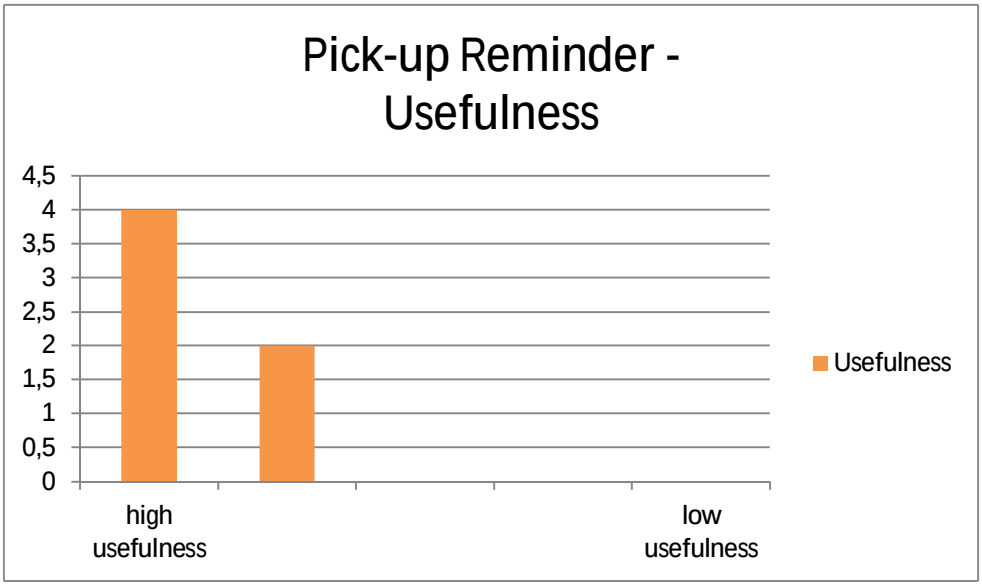


Figure 22: Pick up Reminder - usefulness

The pick-up reminder service was also rated as quite useful (mean: 1.3). The result of the acceptance question was quite differential as well. Three test persons would accept such a device, whereas 2 would absolutely not accept it (mean: 2.5).

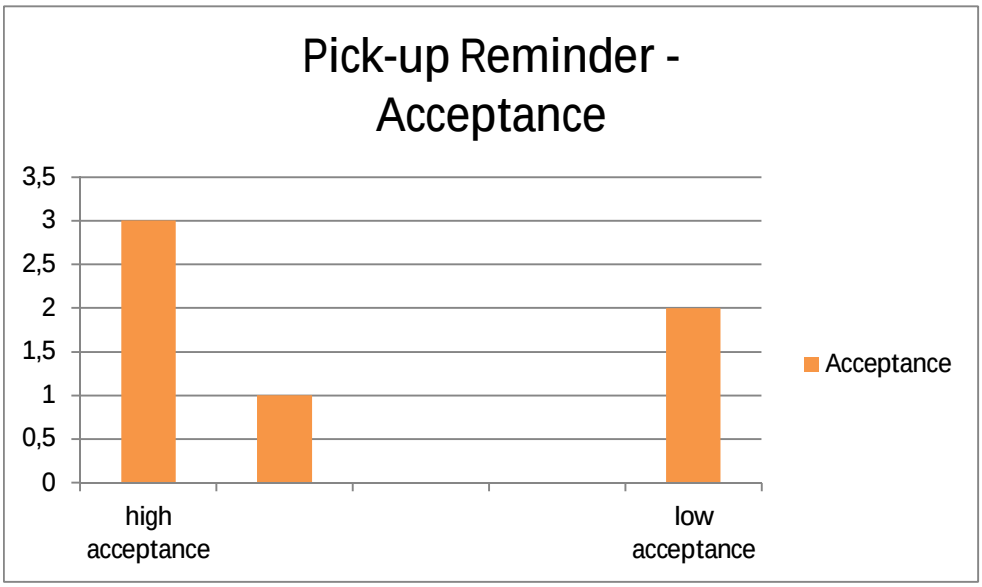


Figure 23: Pick up Reminder - acceptance

The influence of the pick-up reminder to the well-being was rated with 1.8 as a mean.

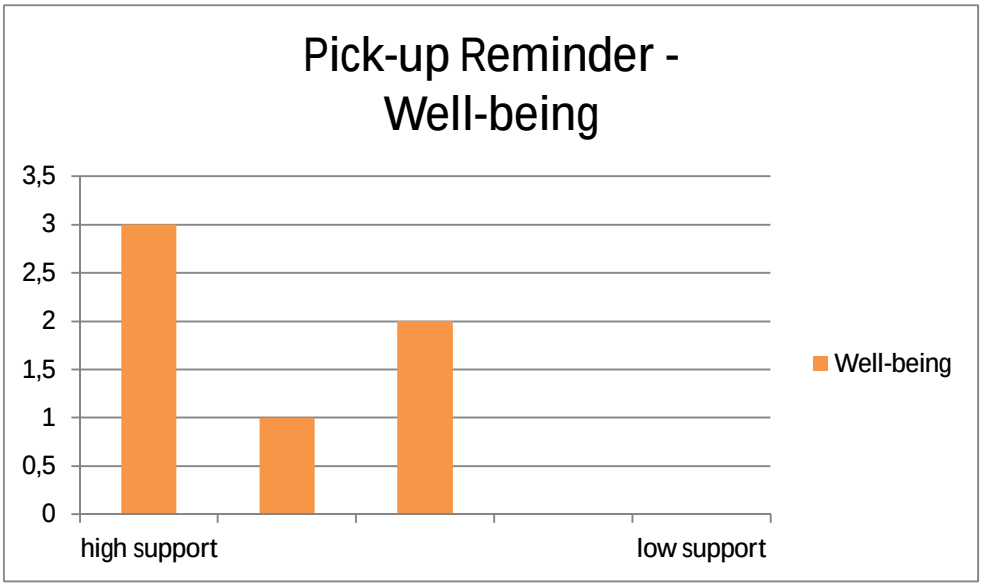


Figure 24: Pick up Reminder – well-being

One interesting comment of a test person was, that it would be necessary to put the items at the top of the tray and that might be difficult to think of.

Results: Rating of the functions

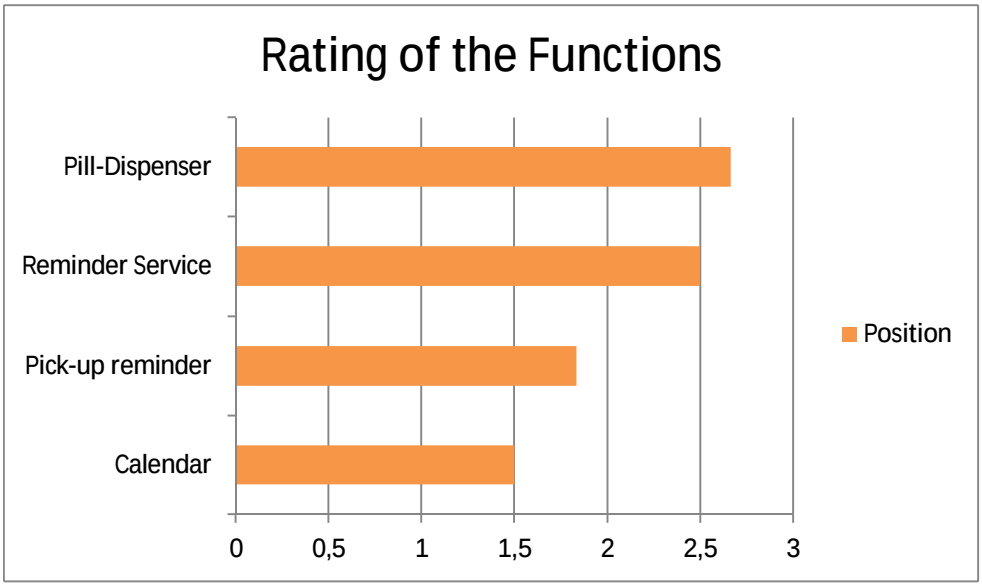


Figure 25: Rating of the functions of the CCE-System

At the end of the survey the test persons were asked to rate the different functions in comparison. The task was to allocate positions to the functions from 1 to 4. The allocation of two functions to one position was allowed. So Figure 25 can be interpreted as follows: the calendar was rated best, followed by the pick-up reminder. The general reminder service and the pill-dispenser were located worse.

Summary of the results

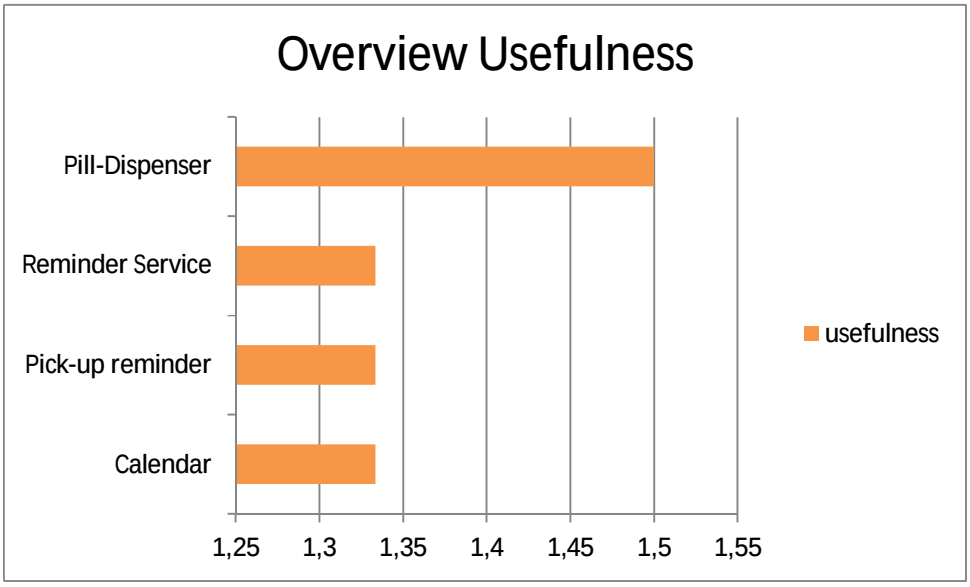


Figure 26: Overview of the rated usefulness of the functions

The overviews of the results of the usefulness and the acceptance show that this divagates from the comparative rating at the end of the survey. The usefulness was rated quite similar for all functions (mean: 1.38), as well as the acceptance (mean: 2.8).

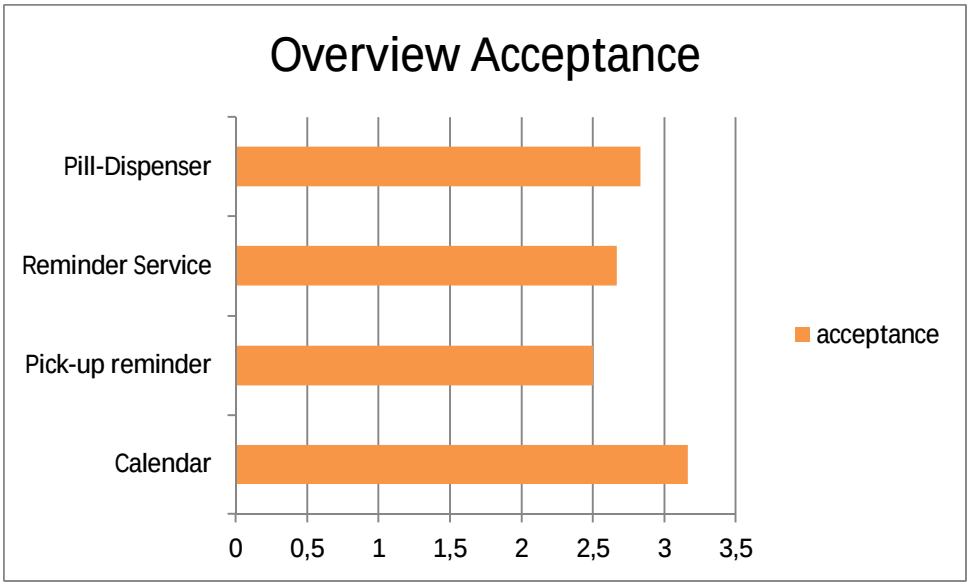


Figure 27: Overview of the rated acceptance of the functions

Problems encountered and lessons learnt

In general can be concluded that the several functions were rated as useful (mean: 1.38), but the test persons were quite skeptical to use such functions themselves at home (mean: 2.8). This fact may have different reasons.
The feedback suggests that the explained solutions might be 'too far away' from their daily life, today. Maybe the barrier to use such solutions might be lower for the next generation of elderly people, because of the fact that they are more used to use technical solutions. One test person already uses the 'Microsoft Outlook Calendar' for organizing appointments, actually. For the other test persons, the barrier to change their habits was actually too high.
One interesting concern was that the cognitive skills of the person which is using such reminder systems might decline. This can be compared to the usage of navigation systems while driving a car, so the driver does not care about the route and does not remember the way back, without the system again. This concern is typical for assistance services.

The described evaluation is providing information about the general trend on a first view. Because of the number of test persons we do not claim a high significance rate of the results. The low number occurs because of the fact that the procedure was quite time consuming (1.5 hours in the mean). One challenge was the recruitment of the test persons, too.

During the execution of the evaluation several technical and organizational problems occurred. In the following these are listed.

Technical problems:

- Functionality of devices: During the trials we were using prototypes of some hardware components. In general, prototypes complicate running trials, because they do not provide full functionality or the user interface is in a preliminary status. This is even more complicated , if the system is developed for a special target group, in our case people with MCI, persons who are not always able to put non-functioning technology in the right context. Therefore, in the concrete situation of trials in the lab we played the scenarios in a guided form, where always a guide was able to explain functionality which could not directly experienced.
- Stability/maturity of software: In close context with the first point the stability and maturity of software has to be mentioned. Also in this case, using the prototypic software conflicts with the interest to get valuable feedback from the specific CCE target group. One possible solution is a careful design of the scenarios taking into account the stability/maturity of the software and to run the trials with the support of a technical backup, that is able to react in short time on technical problems. Another solution could be to separate during the trials user interface aspects from system functionality aspects emphasizing more the look-and-feel as well as the interactions aspects of the system.

Organisational problems:

- Finding the right candidates. Finding test candidates from the aimed target group pointed out as a complicated task. People suffering on MCI usually do not know that they have this deficiency and this information can also not be elicited by questioning persons. The solution we choose to solve this problem was to get in touch with a rehabilitation organization that is treating people after severe accidents (ZANR: Center for Outpatient Rehabilitation). The ZANR is a center for outpatient neuro-rehabilitation and is treating patients after e.g. operations on the brain and spinal cord, infections of the nervous system (e.g. meningitis, encephalitis), or degenerative processes in the central nervous system (multiple sclerosis, Parkinson's disease). It has an overview on the cognitive status of its patients and supported us in asking possible candidates on willingness to participate on our trial. In case of a positive answer we contacted the persons directly and invited them.
- Availability of devices (pill dispenser, tray)
  Some hardware components were developed as innovative devices during the course of the project. As a consequence the devices were available only in one exemplar which has to be used commonly by all the trials. This increases the effort organizing the trials and restricts the available time for trials.

Field test system reliability and acceptance in Hungary

Brief review of the tested technical system

As described in deliverable D3.2/D4.2/D5.2 (Report on development solutions) the CCE-system is comprised of service and user interface components. Both are including software and hardware components. According to the MeMo-Net concept, the system is designed as a modular system so that packages can be acquired to suit users' personal context and preferences.

The components of the CCE-system can be seen as follows:

- User Interface (including UI hardware and software)
  - Dementia sufferers UI in the living room
  - Dementia sufferers central hub UI
  - Digital corkboard UI living room
  - Medication dispenser UI
- Service (including service hardware and software)
  - Medication dispenser
  - Dementia diary
  - Activity tracking

In Table 3 all components (hardware and software) are listed. The right-most column indicates which components have been evaluated at BME.

Table 5: MeMo-Net components

User Interface	Function	Hardware/Software		Evaluated at BME
Dementia sufferers UI living room	Reminder	HW	TV with NetTV	no
		HW	A device with an OS that is capable of running a joint SPACE application and can communicate to the dementia diary	no
		SW	Remote application on TV SW	no
Digital corkboard UI living room	Reminder	HW	TV with NetTV	no
		SW	Digital corkboard webaccess	no
Dementia sufferers UI central hub	Reminder	HW	(Android) tablet	no
		SW	UI app on tablet	no
		HW	RFID reader	no
		SW	RFID software	no
		HW	MeMo-base	no

Caretaker UI		HW	Internet enabled device with supportive browser	no
		SW	Remote app for caretakers webaccess	no
Medication dispenser UI	Medication dispensing	HW	Medication dispenser	no
		SW	Medication dispenser SW	no
Service	**Function**	**Hardware/Software**		**Supplier**
Medication dispenser service	Reminder	HW	Medication dispenser	no
		SW	Medication dispenser output to Diary	no
Dementia Diary	Activity storage	HW	Database server	no
		SW	Remote app for caretakers webaccess	no
		SW	Dementia Diary software	no
Activity tracking	Activity tracking	HW	Sensor set	yes
		HW	Device with Linux OS	yes
		SW	HomeGateWay	yes
		SW	Dementia Diary software	no
	Reminder	HW	Sensor set	yes
		SW	HomeGateWay	yes
		SW	Dementia Diary	no

Adaptation of methodology used for the tests

The methodology used was defined during a CCE-workshop to develop a uniform approach for the different trials. The general approach is shown in Figure 2, the concrete adaption to the Fraunhofer IESE pilot is described in the following sub-sections.

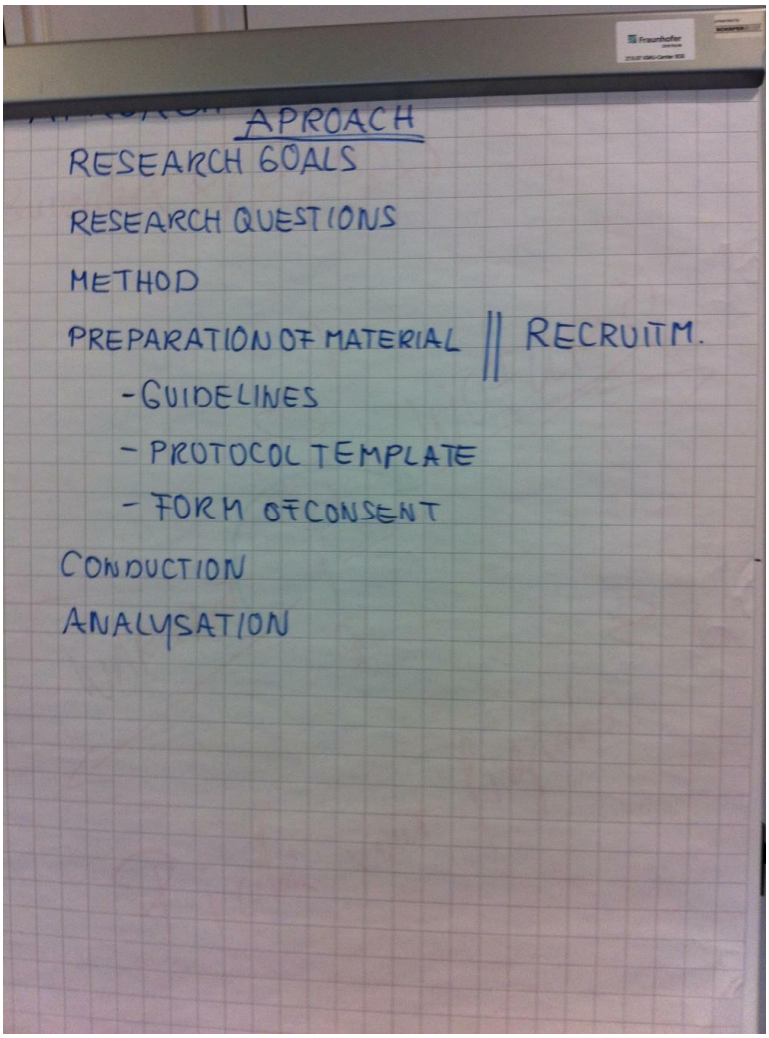


Figure 28: General approach – Draft from the CCE-Workshop

Test objectives

During the pilot we planned to test the user acceptance of a sensor system, which collects real life activity informations. Beside the acceptance of the different sensors we also expected scenarios where based on the detected activities, we can signalise real life situations to the user like:

- The fridge was left open (would be signalised, when leaving the kitchen)
- You should close the window (when temperature is too low)
- You should open the window (when humidity is too high)

Test setup

Based on the sensor informations we detected predefined everyday activities, which should be noted by the test person. We evaluated the reliability of our activity recognition system based on these notes. Since the tests were executed in the homes of the users, we visited them on a weekly base to speak about personal impressions, to check the sensor system, and to gather the notes taken by the user. A typical form of a note describing a day can be seen on the next page.

Log book <Date>.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!												
Grooming, toilet usage												
Leaving the flat: to “from” column, please!												
Coming back to “to” column, please!												
Other person(s) in the flat												
Easy chair usage:												
Watching TV												
Going to bed at night: to “from” column, please!												
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME:
COMMENT:

Since our system was able to signalise different situations to the user locally in a verbose way, we prepared the following questions based on the methodology provided by our partners:

Obtrusiveness	• How would you describe the presence of the system in your daily living?
	1. Did you consider the system to be disturbing
	2. (if yes to 1a) How disturbing was the presence of individual sensors (contact, motion, power, pc, speaker)
Reliability	• How trustworty do you consider the reminder function?
Usefulness	• Describe how the system helped you in daily living
	1. Was this according to your expectations?
Usability	• How did you perceive the signalling of the system?
	1. Sufficient frequency?
	2. Comprehensibility?
	3. Sufficient saliency?
General UX	• Describe something you like about the system (perhaps from diary)
	• Describe something you dislike about the system (perhaps from diary)
	• How would you improve the system?
Acceptance	• What do you expect from the system for the week to come?
	1. (How) do you expect to be using it?
	• Would you recommend the system to others?
	1. Why?

Last question on last meeting:

Would you use the system again? If yes/no, then why?

Test results

Test 1 location and participant

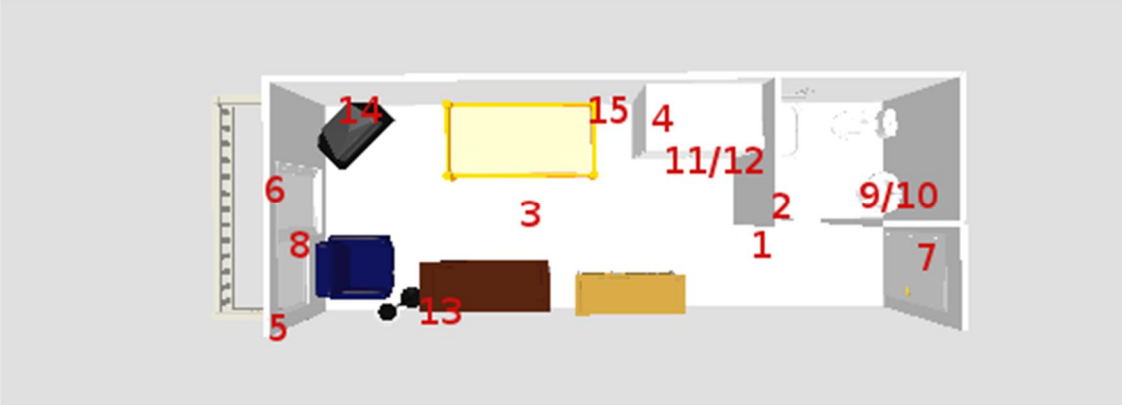
Location: KD nursing home in Hungary.

K.D. is a nursing home for elderly people, with separate apartments (with bathroom but no kitchen), and different communal areas (kitchens, library etc.). The size of apartments differs from 18 to 36 nm. Different levels of services are provided for different needs:

The director himself suggested testing our system in his nursing home, during a dissemination held on our University. We contacted them in December, and found two elderly (in their 80s), who agreed to let us test our system in their apartments. They were

both very eager and happy about the solution we suggested, and were full of anticipation, but one of them stepped back, because her hearts condition worsened before the test.

The view of the 24nm apartment:



Location of sensors:

1	entrance Motion	9	bathroom Humidity
2	bathroom Motion	10	bathroom Temperature
3	beside bed Motion	11	living room Humidity
4	bed Motion	12	living room Temperature
5	easy-chair Motion	13	lamp_chair Consumption
6	living room Motion	14	TV Consumption
7	door Contact	15	lamp_bed Consumption
8	balcony Contact		

We planned to detect the following activities in this apartment:

- Entering/leaving home (2 motion sensor, and 1 contact sensor)
- Balcony usage (2 motion sensor, and 1 contact sensor)
- Bath/toilet usage (1 motion sensor, and 1 humidity sensor)
- Bed usage: resting/reading/sleeping (2 motion sensors)
- Coach usage: resting/reading/needlework/listening to the radio (2 motion sensors, and 1 power sensor)
- Looking TV (1 power sensor)
- Window left open (1 contact sensor, and 1 temperature sensor)

Duration: from begin of February, 2012. to 15th of May

"Target person" participating in the project:
She is 88 years old. She lives in the Home for four years, an active, lovely lady, slightly limited in her movements because of earlier femoral neck fracture. She does not go out of Home alone. She stays normally in her room, takes her meals there, but leaves the room for taking part in community occupations.

She accepted with pleasure that our sensors would be deployed at her apartment, quickly understood the capabilities of our system, and would recommend it to her friends living alone in their own apartments, as soon as it becomes a "product":
She willingly makes notes about her daily activities on a paper-based "time sheet". She does not use a computer.

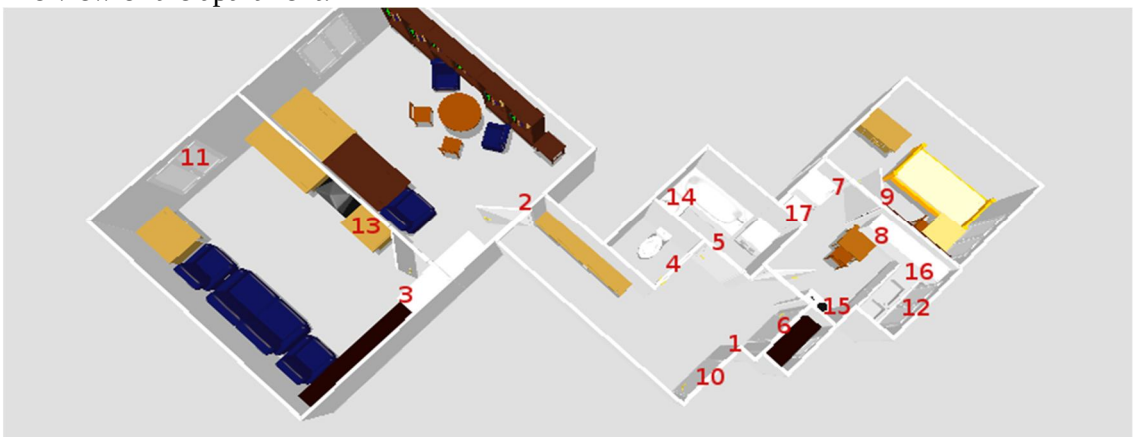
Her opinion about the system:

- It would mean security for the elderly, if the sensors indicated the detection process with striking flashes. This may result rapid discharge of the batteries, but this opinion may be taken into account in a permanent deploying.
- She did not like the siren, so we dismounted it.
- She has frankly supported our work with her idea, within a few minutes she outlined the tasks of a multi user system and a service provider “co-op”: technical management, caregiver person assistance at evening, food transport, household task etc.
- In her opinion it would be useful if the sensor signalled that user has forgotten turning off the TV, lights or left open the balcony door or windows before user leaves the apartment. She think it is a good idea that appliance can send an alarm (can) if somebody does not move for a long time. But she could not use the reminder function ("Dementia Diary"), at least not in a nursing home.
- She actively tries finding an investor via her old – and constructed especially for this – personal relationship for further development of sensor system that she got familiar with.

Test 2 location and participant

Location: Test persons own home in Budapest, Hungary. There are two rooms, hall, kitchen, bathroom, and toilet. It is a flat in an old (1912) house.

The view of the apartment:



Sensor locations:

1	entrance Motion	10	entry door Contact
2	hall Motion	11	bedroom window Contact
3	bedroom Motion	12	kitchen window Contact

4	toilet Motion	13	bedroom Hum/Temp
5	bathroom Motion	14	bathroom Hum/Temp
6	Motion	15	oven Hum/Temp
7	kitchen Motion	16	water heater Power
8	dining table Motion	17	microwave Power
9	guest room Motion		

We planned to detect the following activities in this apartment:

- Entering/leaving home (2 motion sensor, and 1 contact sensor)
- Bath usage (1 motion sensor, and 1 humidity sensor)
- Toilet usage (1 motion sensor)
- Eating breakfast (1 power sensor on the water heater, 1 motion sensor above table)
- Eating lunch (1 power sensor on the microwave, 1 motion sensor above table)
- Looking TV (1 power sensor)
- 2x Window left open (1 contact sensor, and 1 temperature sensor)

Duration: from 15th of May 2012. to end of June 2012.

"Target person" participating in the project:
She is 90 years old lovely lady in good health. She goes out of flat almost every day, sometimes departs for days. She stays especially in the room if she is at home, she eats in the kitchen.
She bears with indulgent patience the problems of installation and re-installation of the sensors.
She correctly takes notes on paper-based "time sheet" about her daily activities and movement. She uses computer to: game, correspondence, Skype.

Her opinion about the system:

- The sensors didn't disturbed her, except when one of them fall of during the night
- She likes the idea of having a reminder for taking the medicine, and maybe for dining
- Would like to have a function, where the system tells her, where her glasses are at the moment
- Since she doesn't have a good sense of smell, so she suggests to have different gas sensors in the system as well
- Thinks the system should be modular since every person has other needs, for example she doesn't need a fall detection function but her 99 years old neighboar could use one
- She didn't tested the reminder function, but regardless mentioned that the reminder should only assist and not trying to controll people

Sensor system results

ZigBee standard enables devices to create a mesh topology. It is useful, because data can reach target via other path, if one of them is not in operation. In the pilot we benefited from this. Some devices were in a shielded place meaning they didn't reach the coordinator directly. Thanks to a cluster topology inserting router device placed to the corner of the corridor, we were able to pass on signals from the device through the router to the coordinator.

ZigBee standard defines 16 channels in the 2.4...2.4835 GHz band, and during the pilot we were able to establish more than one ZigBee network parallel to each other.. This new network was used to take over some loads from the old network. Some ZigBee standard devices use Collision Avoidance method to access the medium, so if there are many devices which wants to use the same medium, the channel can be saturated. Although Standard defines beacons, number of time slices is finite. Saturation can be avoided with establishing a new network.

Sensor network uses AES128 encryption in transferring data according to ZigBee standard. It makes radio based communication safety with respect to monitoring network by an unauthorized party. However, new sensor could be added to the network easily, sending "Enable Device to Join" to Device Manager. This mechanism guarantees that if there is more than one ZigBee network, user can decide which new device to connect to which network.

Contact sensors were by far the most reliable devices in the network. They sent data when event occurred, and after every minute a status information. The system could detect their presence in the network by reading their status information. The sensors used Reed relay with magnetic beacon, so state of contact (open or close) could be detected reliably.

We designed and applied a supervisor program named cce-daemon. It is a daemon written in C programming language. Task of this daemon was to launch check and relaunch all other applications in the system. Some of them must run after booting, some of them must run if specific USB device is connected to the PC. Daemon checks running applications in every 20 seconds and if one of them is not running or zombie then daemon relaunches it. This function has been very useful because even after a software component broke down, it was restarted after 20 seconds tops, and everything worked fine again.

Configuration and log files: cce-daemon writes a file which contains all running processes launched by the daemon. This configuration file has been useful because during test it could be checked whether all desired processes were running or not.

Configuration File Manager: we wrote a Python program which has handled the configuration file containing all sensor data connected to the local system (to the Home Gateway). Task of this manager was to handle the sensor configuration file and to assign Home Gateway ID to every newcomer sensor. This application guaranteed that Home Gateway IDs was unique on the local system. Reading the sensor configuration file it was also easy to determine which sensor is in operation and which is not. Because sensor managers sent message is a sensor lost, and Configuration File Manager registered this information into sensor configuration file. Sensor status (Connected or Lost) was sent via D-Bus.

The system used D-Bus for inter-process communication. So software components could be written in various programming language, provided that it has D-Bus binding. Although D-Bus is not a fast communication channel, its signal propagation delay is about 1.6 ms, the system can be modular. New function can be added to the

system easily because every module can get signals and can send its own one. In addition proper permissions can be set, but this function was not used during pilot.
Adding modules to system assumes that interfaces are specified carefully. We spent a lot of time to specify all objects, interfaces, methods and data format on D-Bus, specifying the modules and their functions. According to these specifications newer module could have been fitted to system in its stride.
The only problem at the end of the pilot remaining was that some of the sensors sent their information twice. Since we don't have direct access to the sensors we need to solve this problem by filtering out the second information by comparing it to the previous one.
Concluding we can say, that the sensor system worked more reliable than anticipated, but it needs a lot of installation and configuration time, to detect the shielded devices, and to decide where and how to mount the sensors in the homes.

Activity detection results

The inference tries to detect the following activities (and the timing of them):

1. The person performs outdoor activities,
2. The person is in the living room,
3. The person is in the in the bathroom,
4. The person is on the bed,
5. The person is sleeping,
6. The person is reading,
7. The person is resting,
8. The person is on the armchair.

There are two possibilities how the activity detection and characterization could be used.

1. The activities can be recognized and the timing of it could be detected precisely as well.
2. The activities could be detected only qualitatively.

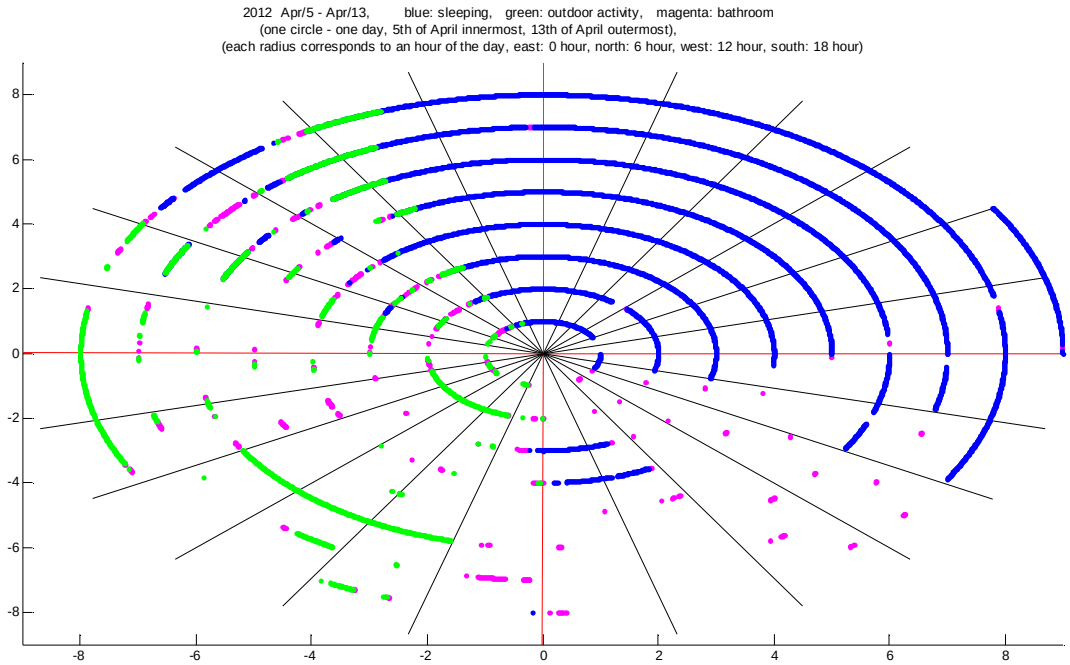
Currently the first goal cannot be reached. Neither the hardware devices (number and types of the sensors, computational power) nor the test methods we are able to use are enough for such preciseness.
Problems with the sensors: we have only some motion detectors, temperature sensors etc. But it is hard to distinguish between resting and reading etc.
There are problems with the test methods used in the research and development as well. To develop precise devices, exact real life test data are needed. Unfortunately the preciseness of a human being is usually much less than the needed one. In the diary the test person gives the activity, the start and end times of it. For example in the diary of April 05-April 12 the following problems can be shown, only on 5th of April:

- There is two occasions during the day when armchair usage is recorded, the second one has only start time and has no end time.
- TV watch: the start time is given the end time is not given.
- The "go to sleep" action is earlier than the TV watch time.

- There are three periods when other persons are in the flat under test, but the inference is prepared for one person only situations.

- Probably there are actions which are not recorded, for example bathroom usage during the night.

Therefore the test information available is not enough to develop methods for exact activity inference.
On the other hand a qualitative picture of the activity inference could be formed. It is shown by investigating the inference in the 5th of April 12th of April week.



In the figure the following inferred activities are shown: sleeping (blue), the outdoor activities (green) and the bathroom usage (magenta). The activities of 8 days are structured in the following way: each day is a circle, the timing within the day is given by the angle. The innermost circle corresponds to 5th of April the outermost circle corresponds to 12th of April. The rightmost position is 0 hour 0 minute, the vertical position is 6 hours 0 minute and so on. The 24 lines drawn correspond to the 24 hours of the day.
It can be seen that there are periods each day when the bathroom is frequently used, for example between 8 and 10 am. On the other hand between 2 and 5 pm the bathroom is rarely used. There are long outdoor activities inferred on 6th and 10th of April between 2 and 5 pm.

Concluding we can say that since the evaluation of the correctness is based on the notes of a human being, we had some problems to take into acount:

- Start time of an activity was noted, but no end time was given
- Sleeping action was dated earlier than looking TV, which contradicts
- We detected activities which weren't noted
- In most cases we detected the same amount of an activity but in different times

Dealing with these problems we had to realise, that we cannot evaluate the exact correctness of the activity recognition. We can only evaluate it's correctness on a quantitative level.

Further development of the activity detector

Beside the correctness of the notes taken by the test person we identified a failure in the activity recognition which needed to be corrected. The activity detector was based on one finite state machine (FSM). This resulted in advantages like the ease of configuration and perspicuity if the number of state was small. One drawback of this solution was the handling of parallel activities, which needed a lot of states to be defined. The main drawback however was caused by the fact, that if an event wasn't signalized correctly it could cause the system to remain and freeze in a state, not being able to follow the activities taking place afterwards. This for example was caused during the pilot because the "no motion" information can only be detected after 5 seconds time.

We revised the algorithm, and we used instead of the FSM an array of probability processes. These processes can be independent of or related to each other. With this approach we can define processes which can be activated independently from each other (parallel processes). With this method the configuration of the activity detector becomes much simpler than the FSM using method.

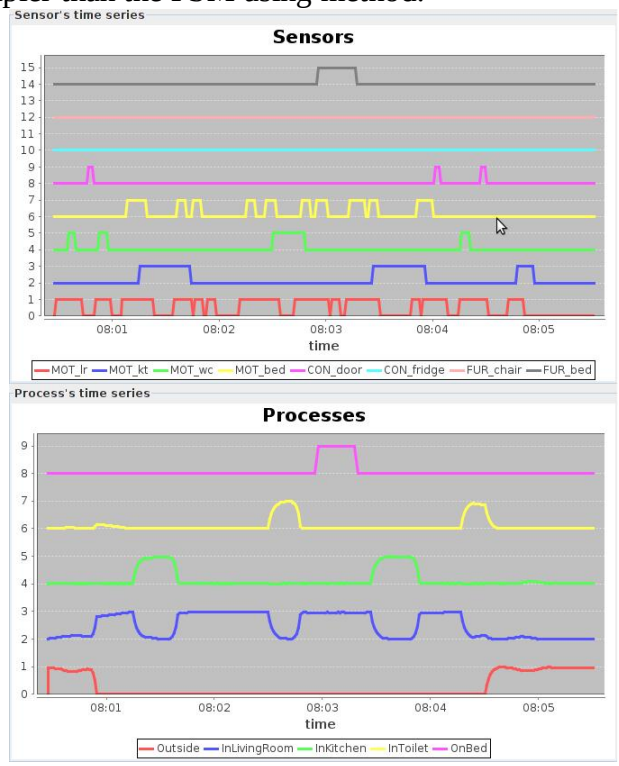


Fig. 1. Above: time series of the sensor signals, below: time series of the process probabilities

To configure the activity detector first we have to define each activity to be detected as a process. After this step, we have to define the relations between processes. In Fig. x. the Outside, inLivingroom, inKitchen, inToilet processes are excluding ones, so their probabilities sums up to 1 (only one of them can be active; but at least one should be active). However for example the OnBed process is only dependent from

the inLivingroom process (the bed is in the livingroom). The processes have a priori probabilities and activation probabilities, the latter is used to define a threshold when we consider a process active. The FSM's best capability was the detection of event sequences, which we need in some cases, so each process contains a small FSM to be able to detect event sequences.

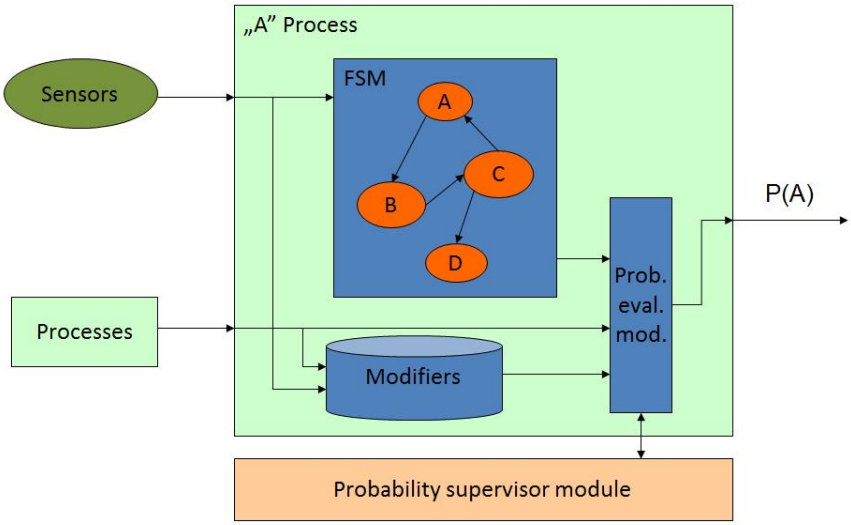


Fig. 2. The scheme of a process

The last step is to define process modifiers, these describe how the sensors and time affect the probabilities of the process.
The modifiers can be the following:

- Sensor related (shown for the case of binary sensors)
  - Increase when a specified sensor signal is 1
  - Decrease when a specified sensor signal is 1
  - Increase when a specified sensor signal is 1 AND decrease when the sensor signal is 0
  - Decrease when a specified sensor signal is 1 AND increase when the sensor signal is 0
- Process related
  - Increase if a specified process is active
  - Decrease if a specified process is active
  - Activate only when a specified process is active (precondition process)
  - Increase when a state in the process own FSM is activated
  - Decrease when a state in the process own FSM is activated
- Time related (not implemented yet)
  - Increase/decrease when a specified time is elapsed from the process activation
  - Increase/decrease when a specified time is elapsed from a sensor event
  - Increase/decrease according to the time of the day

For example the OnBed state contains the following modifiers:

- Activate only when the InLivingroom process is active
- Increase when the on bed state is active in its own FSM, which state is activated by the motion sensor over the bed.

The XML description of the onBed state is the following:

```
<processes aprioriP="0.01" activationP="0.5" name="OnBed">
    <fsm edgeId="2" activeStateName="NotOnBed" name="onBed">
        <states name="OnBed"/>
        <states name="NotOnBed"/>
        <edges nodeB="NotOnBed" nodeA="OnBed" name="EV_MOT_frontbed" id="0"/>
        <edges nodeB="OnBed" nodeA="NotOnBed" name="EV_MOT_bed" id="1"/>
    </fsm>
    <processInfluencers level="0.0" weight="0.5" nameOf="OnBed" type="INC_STATE"/>
    <processInfluencers level="0.0" weight="0.5" nameOf="NotOnBed" type="DEC_STATE"/>
    <processInfluencers level="0.5" weight="0.0" nameOf="InLivingRoom" type="FSM_PREC_PROCESS"/>
</processes>
```

Concluding we can say, that the new activity detector provides a simpler configuration and more effective activity detection. The skeleton of a configured process can be used many times, so we don't have to start the configuration from scratch.

Problems encountered and lessons learnt

Technical problems:

- number of sensors: We placed more than 6 sensors without routing functions in the first apartment, and the seventh didn't wanted to connect itself, as it did it in our lab. We needed some time to realise, that in the lab we had sensors with routing functions as well, and after every sixth sensor we needed to place a routing device as well to make them work correctly.
- motion sensors facing to the window: During the test we registered motion in the room, when no one was present in the home. After analyses of the problem, we realised, that changing sunlight (motion of shadows because of the wind outside) can be detected as motion inside the house, if the sensor is placed looking in the direction of the window.
- motion sensor IR Disabled Time limit: when motion sensor detects motion, its state changes to "there is motion" and sends a signal. If there is no motion than the sensor waits for a given time, defined by the IR Disabled Time variable, and changes the state to "there is no motion" only after the given time. This time can be set only to 5 seconds or more. Lower value is not possible. This 5 seconds delay has been disturbing to the inference algorithm because faster "no motion" detection allows faster and more precise activity detection. Optimal IR Disabled time would have been around 2 seconds or lower.
- disabled router: In the second home we had places where the communication signal of the sensor was disturbed. We tried to solve the problem with an extra router to enable an alternate communication path. Unfortunately the communication of the router was disturbed with the coordinator, but not with the sensors, so the sensors sent their information to the router, which couldn't be forwarded to the coordinator. The problem was, that the sensors didn't looked for another alternate way to communicate, because of the disabled half working router.
- mounting of sensors: In the second home we used the same mounting technology with velcro tapes (which was successfully used in the previous home), but every week one or two fall off. It seems that a different surface needs different tapes to fix objects on it.
- wifi reconnection: In the second home we had some issue with the wifi handling of the operating system. Somehow, it didn't wanted to reconnect to

the wifi after losing it, even though it was set to auto connect. After deleting and resetting the connection information locally, it worked again.

- remote booting was not possible: We couldn't find a way to boot up the system remotely.
- auto boot if power is present was not possible: In desktop PC, there is an option in BIOS where an auto boot option can be set, if power is available. We wanted to use it in our gateway as well. Unfortunately, the laptop we used as a gateway didn't have this option present, and we couldn't find a way to make it possible during the running tests.
- remote restart was not possible: We couldn't restart our gateway remotely, because a keyring functionality of the operating system. We found a way to disable it temporally, but it reseted himself after the second restart of the system.
- memory leakage in sqlite: Only in the live test of the system did we found out, that using sqlite causes memory leakage. It had the effect that after a day the memory was so full, that the software component was stopped by the operating system. We had to replace sqlite with mysql, and since than we had no memory leakage any more.
- system overheating: We had a draw function for displaying sub-state changes in the activity tracking component. If we remained in a state too long, this draw function caused a heavy processor usage. We didn't know that time, but the laptop we used for the gateway had a construction error, which caused the processors to overheat if it was loaded heavily for a longer time. This caused the system to emergency shut down, and we had some trouble to find out the cause. We found out that this error could be fixed by BIOS update, but we couldn't do that during the pilot, so we just set the power save function of the system, to load the processors only till 50%. This solved the problem temporarily.
- software bugs: We had some software bugs, which we couldn't find in our lab environment, and only presented themselves after a week time, causing segfaults in the system. We were able to identify the cause of the problems, and extinguish them.

Human problems:

- We had some difficulties in finding people, who are willing to take notes of their actions, and could be in need of our system, even harder was it to get them to allow us to test our system in their home environment.
- Some candidates were refused by the head nurse. For example one candidate was refused by the head nurse thinking that she is not in the mental condition that she could reliably guide the log. Although the lady herself enthusiastically waited to be visited by the staff of BME.
- We had a candidate who was looking forward to the tests, but having been for long time in the hospital, his rehabilitation has been delayed so far, that we could not install our system in the given time in his flat.
- We had three participants out of five who would have allowed us to test our system in their homes, but then refused it afterwards:
    - First candidate refused, because she often visited her relatives, and thought it wouldn't make sense to test our system if she is for a longer time away.

- Second candidate refused because of worsening health conditions
- Third candidate assured us, that she isn’t the right candidate for the tests, because she is too fit mentally and physically to get any help from the system. Later the head nurse told us that the main reason of her backing out was that she had not wanted relatives to "see" when and what she does.

Positive experiences:

- rechargeable batteries lasted the whole two months without depleting in the sensors
- after letting a sensor fall to the floor (in a way that the batteries has fallen out), only the batteries needed to be set back, and everything worked fine again
- using a daemon program in the backend, even after a software component braked down, it was restarted after 10 seconds, and everything worked fine again

Market implementation study at pilots in UK

Brief review of the tested technical system

Every developed economy is struggling to contain the future costs of health and social care services due largely to an aging population who will be living longer and will require increasing levels of care. It is recognized that major economic and social gains accrue when individuals are given real power and autonomy in the management of their personal health, illness and wellbeing.

The Assisted Living Companion proposed is an enabling, innovative technology that unblocks the barriers to this and assists people with their management of life and work. It also recognises basic human rights related to privacy and consent, it will allow health and social care planners and economists to truly personalise care and it permits informed commissioning decisions to be made.

The Assisted living Companion is a health information service accessible to the individual through a User Portal across the Internet. It is designed to inform, guide, and assist the individual in managing his or her health and care. It belongs to the individual, but the information can, with permission, be made available to those providing that individual with advice and care. The ALC looks to provide:

- An Individual Health Record that contains and presents in understandable terms the information of most importance to the individual's wellbeing, including information from Carer's, GPs, hospitals, home care equipment (Telecare / Telehealth), and entered by the individual;
- Customised management of alerts and responses arising from the information in the ALC such as overdue actions, abnormal conditions or results, and serious events;
- Personalised health plans and objective and how those are being met;
- Access to personalised advice, tools for managing early onset dementia as well as other chronic conditions and lifestyle, and support groups;
- Personal Organiser for tracking and managing self-care tasks, appointments, investigations, etc;

We believe the ALC when fully implemented and all necessary interfaces are in place will for the first time offer an information service whose primary purpose is to 'run the individual' rather than run a Hospital (Patient), a Local Authority (Citizen), Social Services (Service User) or even a home care setting. It defines for each person an 'Individual Health and Care System' of those involved in the individual's health and care, bound together by information. It provides the currently lacking focus of control for information and events about the individual that span organisations and settings. It will help to tackle the already serious and worsening fragmentation of individual care.

Description of the tested scenarios

The innovative core technology for the Assisted Living Companion now exists and is in use. This project will exploit that technology for the first time in the UK to deliver a new model of care. The project is intended to form the first stage of a programme of work to develop improved health services that exploit fully health informatics within their design. We have employed User-Centred Design methodologies with individuals (patients) to research, develop, and pilot new capabilities for personalised health service that will improve the health and care of people with early onset dementia.

As part of the project we were looking to test whether specific scenarios could be supported by technology like the ALC and Memonet. An example of such a scenario is:

Theodore and **Mildred** retired early having had very successful careers, sold their family home and moved to a privately managed property with support and security. In recent years both Theodore and Mildred have developed health issues, which, has put increasing pressure on them and their immediate family. In addition Theodore is showing the early signs of dementia, become forgetful and prone to wandering.

Theodore has been suffering with Diabetes and a mild heart condition and has a number of drugs to take each day, this is proving more and more difficult for Mildred as struggles to support her husband and manage her own stage1 COPD.

Their 3 children **David, Carol and Brian** all have fulltime jobs and families and they have discussed whether one of them should give work to help support mum and dad fulltime. They have decided following discussions with mum and dad and their doctors to look at a support package covering both telehealth and Telecare see how it works for them. They hope to have this service available for at least 4/5years to allow the family to maintain a work life balance keeping at bay deterioration with a view to keeping mum and dad in their own home as long as possible expanding this service if necessary over time.

David, Carol and Brian are looking for a service covering both Health and Telecare services, including support for Theodore's dementia. They are particular concerned about taking the pressure of mum as it is having an effect on her health and dad's forgetfulness leading to him missing his medication and blood glucose level checking.

Test results with anonymous description of the test persons

It was not possible to find willing participants with the complexity we wished to consider as outlined above but we were able to run what if scenarios in order to design and build specific functionality to support such scenarios including test messages from the memonet device (whilst these were non standard we are able to accept such message types and incorporate relevant data into the ALC) this was not tested live in the Draper road facility. This functionality was made available to the Bournemouth City Council Dementia facility – Draper Road. We were able to facilitate a comprehensive demonstration capability with Theodore as the main persona, Theodore having a comprehensive ALC record as well as the dementia corkboard facility, we also able to install a real time glucose monitoring device into the system as we would expect to see and use it in the home.

This capability is still under test within Draper Road with staff and residents assessing its viability and looking to answer questions such as:

what do individuals (patients) want from such a health service?

how will different individuals make use of a Personal Health Companion?

what specific issues arise that require new solutions (e.g. in privacy)?

how do established health services need to develop to support the new models of care?

how will protocols of care be agreed, managed, and deployed in a personalised context?

what is the impact on health behaviours such as compliance with protocols?

Problems encountered and lessons learnt

The main issue relating to the project is be able to access the right community of individuals to undertake full and rigorous testing. Identification and consent has proved difficult and extending this to really life deployment the ability to stratify and identify the target population will be key.

In our Draper Road pilot site we have also encountered the usual issues of equipment being damaged and stolen which has brought its own challenges.

The project has highlighted that whilst we have all worked very well together and have shared our experiences we must always be mindful of the cultural differences that exist in how technology and care is delivered across europe…..whilst issues we face all the same there are subtle difference in how health and care is delivered, so what might be right for one community it might be very different also. Indeed the financial aspects also very widely what is considered 'reasonable' and cost effective in one country it might be deemed very expensive in another and so the technologies are not necessarily transferable but the learnings are.

We also need to take account of the technology landscape in a given community for example here in the UK we a very advanced in terms monitoring equipment such as motion sensors, medication dispensers, life style monitoring etc and so we must be sure we can integrate with our respective technology landscapes.

Appraisal of the pilot

Bournemouth Borough Council senior assisted living expert evaluated the UK CCE demonstration at the Draper Road dementia care home.

Two meeting at Draper Road were undertaken between Bournemouth assisted living expert and Centrihealth with the project outline and demonstration of telehealth and telecare devices and the Centrihealth web portal (corkboard). It was identified that the Council IP based telephone system would not work with the system, however the residents IP telephone system did enable the modem and data transfer to take place.

The view of the Bournemouth assisted living expert was that the cork board layout would enable users with dementia to easily find information on their daily activities, such as taking medicines and the format for the carers was similarly very usefully. The information presented on the cork board, such as appointments, medication, information on diet etc was information that users needed.

It was agreed that residents would view and comment on the web portal. However, the initial users to look at the cork board and dementia diary were at an advanced stage so could not comment on the cork board. Other users will view the CCE demonstration over the coming months after the CCE project is complete.

Scoping study

As a direct result of the work undertaken as part of this project and the relationships it has fostered we are pleased to be able to say that it has resulted in part in a commercial collaboration and offering between Centrihealth and CarelineUK (Peverel).

In order to co-ordinate care there is a need for a 24/7 patient-friendly interoperable 'information and communications hub' designed around each individual, which acts as a bridge between the individual patient and their wider care environment, as well as between those professionals involved in the person's care.

Care providers in the UK are increasingly looking to improve the patients/service user understanding of the benefits of individual accountability and taking responsibility for their

health and well being. Care providers need to involve individuals by providing useful and useable tools and access to information to become better consumers of healthcare services.

In recognition of this CarelineUK and Centrihealth, have joined forces to bring to the market the Appello end-to-end Telemonitoring Service underpinned by many years of experience, best practice and a new state of the art software platform CARENET to break though the barriers that currently prevent adoption and role-out at scale to help individuals and their families manage their diseases as effectively as possible by increasing their reliance on lifestyle coaching that encourages health-promoting behavior and disease management for chronic medical conditions. CarelineUK is now the largest provider of emergency alarm monitoring in the UK, providing reassurance 24 hours a day 365 days of the year. Their success is built on the quality and expertise, monitoring services cover:

- Telecare services and personal alarm monitoring
- Grouped and dispersed alarm systems
- Fire alarms, door entry and CCTV systems
- Lone worker and individual GPS monitoring services
- Intruder calls (Type B or domestic)
- Building repairs and system maintenance monitoring
- Fault reporting and dispatch of engineers/contractors
- Lift monitoring
- Technical helpdesk

Understanding the requirement for integrated telecare and telehealth, the need for interoperability, information and workflow, needs of patients, clinicians and other caregivers, the new service incorporates the Centrihealth Assistive Care Record (ACR). The ACR is embedded into the platform the web based personalised portal allows patients to self manage, provide health and lifestyle coaching, allow unpaid carers to take a more active informed role in the support of their loved ones and provide professional clinical carers a consolidated view of their patients, from a single set of data being Telehealth device/provider independent.

We are still in the process of delivering our first implementations of this ground breaking end to end service. This integrated service will cover:

- Combined telecare and telehealth technologies
- Increasing service complexity
- Support for both the patient / family carers and Clinicians
- Use of alerting and the ACR

Conclusion

The MeMo-Net pilot and demonstrations undertaken in the Germany, Hungary and UK are summarized below.

Country	MeMo-Net solution/component evaluated	Demonstration /Pilot	Site	Number of users in evaluation	Age of users (years)
Germany	MeMo-Net solution	Demonstration	Fraunhofer IGD and IESE assisted living labs	12	65 plus
Hungary	Sensors – activity monitoring	Pilot	Care Homes	2	88 plus
UK	Cork Board	Demonstration	Care Home	1	50

It is not possible to make comparisons between the pilot and demonstration sites as there are no common ground for comparisons. The main conclusions of the pilots and demonstration are listed below.

- The German evaluations concluded that many of the MeMo-Net functions were rated as useful by users, but they were quite skeptical to use such functions themselves at home. The possible explanation for the lack of possible uptake of the MeMo-Net solution by users could be that the MeMo-Net solution is too far away from their daily life Future older generations familiar with ICT will use a solution such as MeMo-Net

- The Hungarian activity monitoring pilots were given very positive feedback from the users, with one of the users asking to commercliase the products. There were technical issues during the pilot, which were overcome.

- The UK evulation could not be undertaken due to technical problems and theft of the equipment. Evulation by an assisted living expert concluded that the cork board can be used to present assisted living data to dementia users.

    - Centrhealth have however commercrilased the corkboard in their new commercial assisted offering.

Annex 1 - Usability Test

Introduction

„Welcome and thank you very much for taking your time to participate the interview. My name is [name] and I will conduct the interview today.

Today you have the opportunity to test a product designed to support people in their everyday life. We want to find out how this product can best suit your needs. The results will be used for the further development.

The whole test will take about 60 minutes and the procedure is as follows:

Initial Interview / Personal questions
Test of the MeMoTray
Test of the NetTV
Test of the Medication Dispenser

The interview will be recorded, so that we can be sure not to miss or forget any of your comments and to be able to reconstruct your approach of using the product. These recording will only be viewed by people working on the project.

I would now ask you to sign this letter of agreement so we can start recording. Please take your time to read the agreement and do not hesitate to ask me, if anything is unclear.

You have agreed the recording of the interview.

The product is not finished completely. Therefore not every function is working correctly and sometimes only exemplary content will be shown.

We want you to feel comfortable today. If you need a break or want to cancel the interview, please tell me about it.

Do you have any questions?

You may ask questions during the interview at any time. It may be that I will firstly not answer your questions, because I want to see how you mange it by yourself. But I will try to answer all of your questions afterwards.

Structure

1. Initial Interview
2. First Impression
3. Use Cases/Tasks
4. Final Interview

1. Initial Interview

„Let‘s begin with the initial interview. At first we want to ask you some personal questions:

How old are you?
What is your marital status?
What is/was your profession?
Do you live alone or together with someone else? With whom?
What are typical daily tasks you have to accomplish?
What are you doing in order to remember of upcoming appointments or tasks?
Do you use special tools?
Do you have a calendar in your home?
How does it look like?
In which cases do you use this calendar?
Who enters new appointments/tasks?
What are typical entries?
How do you tick off done activities?

2. First impression

„I would like to ask you to have a closer look at the device. I am interested in your opinion, so I will ask you some questions about it. Please tell me about everything what comes in your mind. There are no right or wrong answers“.

- „What is your first impression? What do you like? What do you not like? Do you like the outer appearance?

- „Do you have any idea what is the function of the device?“

- „What do you think about the font size? Is it too big/too small?“

-

3. Tasks

Use Case 1: User informs himself about today's appointments/tasks

Preparative notes for the interviewer

MeMoTray turned on (tray includes key, wallet and ticket), overview will be shown: doctor's appointment at 11:30, birthday party at 17 o'clock, shower flowers.

Correct steps in order to accomplish the task

Step	Description
1	Take a look at the screen
2	Read aloud the displayed appointments and tasks
3	Press the button „later"
4	Read aloud the further appointments

The task is accomplished as soon as the participant read aloud all upcoming appointments (doctor's appointment at 11:30, birthday party at 17 o'clock) and tasks (shower flowers) of the day.

Observations

- Is the input via the touch-screen obvious?
- Is it easy to identify interactive areas?
- Is the functionality of buttons easy to understand?
- Does the user understand the difference between appointments within the timeline and the „post-it" notes?
- Is it clear, that there may be additional appointments next to the upcoming appointment at a later time?

Task 1:

„Please imagine the following situation:

It is Tuesday, April 10, 2012 at 8 o‘ clock and you just have breakfast. During the breakfast you look at the calendar on the wall. You notice that there is a doctor‘s appointment today. To be sure, you want to have a look at your new calendar, the MeMoTray. For the first time you want to use MeMoTray by yourself in order to get informed about the upcoming appointments.

Please do the following:

Find out which appointments are registered for the current day.”

Standardized Observation

Did the user complete the task successfully?

No, only with a lot of help		Yes, with a little help		Yes, without any help	

Explanation
A lot of help: Moderator had to intervene.

A little help: Targeted questions by the moderator in order to encourage the participant to act.

„Thanks a lot! Let‘s continue with the next task...“

Use Case 2: User gets reminded of an appointment

Preparative notes for the interviewer

MeMoTray turned on (tray includes key, wallet and ticket), reminder message will be shown: upcoming doctor‘s appointment at 11:30

Correct steps in order to accomplish the task

Step	Description
1	Participant voices that it is a reminder of the doctor‘s appointment at 11:30
2	Participant walks by himself/herself to the MeMoTray
3	Click on „More details“

The task is accomplished as soon as the participant reaches the detail page of the appointment.

Observations

- Does the user understand that it is a reminder of an upcoming appointment?
- Is the functional interaction between the NetTV and the MeMoTray obvious?
- Does the participant respond to the call to request further information?

Task 2:

„ Please imagine the following situation:

It is now 10:30. You are sitting on your couch watching an interesting program on television. Suddenly, the following message appears.

Please do the following:

- Explain to me: What is the message about in your opinion? 2. Follow the instructions on the TV.“

Standardized Observation

Did the user complete the task successfully?

No, only with a lot of help	☐	Yes, with a little help	☐	Yes, without any help	☐

Explanation
A lot of help: Moderator had to intervene or to encourage participants to act.

A little help: Targeted questions by the moderator in order to encourage the participant to act.

„Thanks a lot! Now I want to ask you…“

Use Case 3: User requests detailed information about an appointment

Preparative notes for the interviewer

MeMoTray turned on (tray includes key, wallet and ticket), detail page will be shown: upcoming doctor‘s appointment at 11:30

Correct steps in order to accomplish the task

Step	Description
1	Click on the box „Participants“
2	Read aloud of the telephone number

The task is accomplished as soon as the participant founds the telephone number of the doctor.

Observations

- Is it easy to identify interactive areas?
- Is it obvious that the user can request further information?
- Is the information density too high?
- Is the navigation clear?

Task 3:

„Please imagine the following situation:

Just as you want to begin to make yourself ready for the appointment, your neighbor is ringing the doorbell. She reports that she accidentally locked herself out of her home and now has to wait for her son. Since you do not want to leave her alone, you decide to call the doctor‘s office and to cancel the appointment.

Please do the following:

Check if you can find the telephone number of the doctor with the help of MeMoTray.

Standardized Observation

Did the user complete the task successfully?

No, only with a lot of help		Yes, with a little help		Yes, without any help	

Explanation
A lot of help: Moderator had to intervene or to encourage participants to act.

A little help: Targeted questions by the moderator in order to encourage the participant to act.

Use Case 4: User gets reminded to take the medication

Preparative notes for the interviewer

Medication Dispenser sounds

Correct steps in order to accomplish the task

Step	Description
1	Click on button to request the medication
2	Pick up the „medication“

The task is accomplished as soon as the participant picked up the medication.

Observations

- Is the functionality of the Medication Dispenser clear?
- Is it understandable how to request the medication?

Task 4:

„Please imagine the following situation:
Your neighbor's son picked up your neighbor just a couple of minutes ago. You decide to continue watching TV when suddenly another device sounds.

Please do the following:

1. Explain to me: What is the function of this device in your opinion?
2. What do you have to do in order to get your medication?

Standardized Observation

Did the user complete the task successfully?

No, only with a lot of help		Yes, with a little help		Yes, without any help	

Explanation
A lot of help: Moderator had to intervene or to encourage participants to act.

A little help: Targeted questions by the moderator in order to encourage the participant to act.

„Thanks a lot!"

Final Interview

„Now we are almost at the end of the interview. I still have a few questions:

- What did you like the most?
- What did you not like?
- Could you imagine using such devices at home?
- Do you feel safe? Would you trust these devices?
- What could be improved in your opinion?

I want to thank you! We will use the results in order to improve our devices and to make it easier to use.“

Annex 2 – User Acceptance Test

Date: **Time:**

Location: **AAL Labor Fraunhofer IESE**

Part 1 Information about you (before the presentation of the CCE system)

1.1 Your gender?

Male ☐

Female ☐

1.2 How old are you? (optional)

☐

1.3 Marital Status (optional)

unmarried ☐

married ☐

widowed ☐

1.4 What is/ has been your occupation?

☐

1.5 Currently, do you live alone or together with somebody else? If the latter, with whom?

☐

1.6 What do you do to remember upcoming appointments or duties?

1.6.1 Are there any tools that support you?

1.6.2 Do you have a calendar in your apartment?
How does it look like?

What do you use this calendar for?

Who adds entries to the Calendar?

What are typical entries of the Calendar?

Are completed items checked off? If yes, how?

Part 2 CCE-System (after presentation of the CCE-Systems)

Teil 2.1 Medication Dispenser

2.1.1 Please rate the **usefulness** of the medication dispenser (where 1 means high usefulness, 5 low usefulness). Can you imagine that the medication dispenser is a help to take the necessary medication regularly and on time?

1 high usefulness	2	3	4	5 low usefulness

2.1.2 Please rate the **acceptance** of the medication dispenser. Can you imagine using regularly this medication dispenser for your own medication (where 1 means high acceptance, low acceptance to 5)?

1 high acceptance	2	3	4	5 low acceptance

2.1.3 Please rate, how strong the medication dispenser together with its reminder function could improve your overall well-being.

(Please rate whether this functionality could provide support to improve your overall well-being (where 1 means high support, 5 low support).

1 high support	2	3	4	5 low support

Teil 2.2 Calendar

2.2.1 Please rate the **usefulness** of the calendar (where 1 means high usefulness, 5 low usefulness). Can you imagine that the calendar is a help to better organize the daily routine?

1 high usefulness	2	3	4	5 low usefulness

2.2.2 Please rate the **acceptance** of the calendar. Can you imagine that you would regularly use this calendar (where 1 means high acceptance, low acceptance to 5).

1 high acceptance	2	3	4	5 low acceptance

Teil 2.3 Appointment Reminder

2.3.1 Please rate the **usefulness** of the appointment reminder (where 1 means high usefulness, 5 low usefulness). Can you imagine that the appointment reminder is a help to better organize the daily routine?

1 high usefulness	2	3	4	5 low usefulness

2.3.2 Please rate the **acceptance** of the appointment reminder. Can you imagine that you use the appointment reminder on a regular basis (where 1 means high acceptance, low acceptance to 5).

1 high acceptance	2	3	4	5 low acceptance

2.3.3 Please rate, how strong the appointment reminder could improve your overall well-being.

(Please rate whether this functionality could provide support to improve your overall well-being (where 1 means high support, 5 low support).

1 high support	2	3	4	5 low support

Teil 2.4 Item Reminder

2.4.1 Please rate the **usefulness** of being reminded to take necessary items with you (where 1 means high usefulness, 5 low usefulness). Can you imagine that this reminder function can be a help to not forget any necessary items if you leave the house?

1 high usefulness	2	3	4	5 low usefulness

2.4.2 Please rate the **acceptance** of the item reminder. Can you imagine to regularly use the item reminder (where 1 means high acceptance, low acceptance to 5).

1 high acceptance	2	3	4	5 low acceptance

2.4.3 Please rate, how strong the item reminder could improve your overall well-being.

(Please rate whether this functionality could provide support to improve your overall well-being being (where 1 means high support, 5 low support).

1 high support	2	3	4	5 low support

2.5 If you should weigth the four evaluated functionalities of the CCE system, how would you decide? (1 means: "Is the most important")

Medication Dispenser	
Calendar	
Appointment Reminder	
Item Reminder	

Thank you very much!

Annex 3 – Pilot Test

Pilot Test at Sződliget

Goal: Thursday 14:54 24.11.2011

- We want to deploy sensor system to an apartment lived by one person. We should ask the person as soon as possible about what kind of (emergency) signals he/she wants to be signaled locally or sent. We will log the sensoric events. Qualified events (e. g. Emergency, unexpected behaviour) are to be logged by a nurse in a small booklet to latter system evaluation. We will regularly evaluate the logs locally or remotely. We will visit the test person at least once a week to discuss the experiences and to check the system (nurse, patient).
- Assuming the positive outcome of this experiment, we will look for a tender opportunity to get a few million forints for deploying a larger sample system in 6-8-12 etc. pieces of apartments.

Pilot preparation questions: Thursday 13:03, 08.12.2011

- Is the test person healthy or not? What does it mean to be healthy? Why is someone who has for example high blood pressure, overweight, diabetes or is disabled not good? What is the degree of the disease, where the test person needs to be refused? Can we tell this?
- Can he/she work with computer? What level of IT skill is expected from them? Is it enough if he/she is only able to write and read on an always switched on computer?
- Is he/she willing to write down each day what she has done – We will show a sample sheet ranging from 8 to 20 hours a day.
- Activities which are to be recorded:
  - Uprising - going to sleep even daylight, even if he/she lies down on the bed
  - Leaving/entering of the apartment
  - Visitors entering/leaving
  - Usage of electrical device
- Activities the nurse should record:
  Only emergency situations
- What kind of electrical equipments are there which power consumption should be measured? (Is there a fridge in the apartment, kitchen?)
- What can the sensors be attached to?
- Is there any Internet connection? Wired or wifi?
- The flat, apartment needs to be mapped. It is best to get the layout of the home: windows, doors, electrical devices. Table, where you can put the computer.

Visit one:

Director **P**. greeted us on 29th of November.
He assigned **B**. head nurse to be point of contact in sensor installing procedure.

She was going to greet us at 2 PM, 15th of December, to introduce the lady whose quarters we could install the sensors to.
First agreements about the tests:

- Try to avoid visual impairment (first suggested by **B**.)
- Preferably internet presence in the quarters
- Preferably computer skilled test person
- Subject should be able to record his activities in some way in order to get comparable data on the PC or if that fails on paper
- What should be included in the "questionnaire"? We, the BME, will compile it.
- Next Thursday the engineers are allowed to assess the apartments: to see how many sensors can be installed, what devices are already installed, where the computer can be placed.
- The test should have a duration of about 4-5 weeks starting the second half of January.

Visit two:

15th of December afternoon **P**., **N**., **C**. and **G**. assessed the possibilities of the sensor installation in the K.D. retirement home.
B. head nurse, at our request, introduced two residents to us.

Both candidates are kind, eighty years old lady living in the retirement home within a separate living area.
1.
Main building, 2nd floor. There is no internet, but it can be easily accessed via WiFi router installed in the opposite library
Aunt **K.** retired economist, tour guide, a physician assistant.
She lives in the retirement home since four years, is a lively, lovely lady, slightly limited in her movements because of earlier femoral neck fracture. She stays mainly in her room, but leaves it for eating and community occupations. She welcomed the idea of having sensors in her room, quickly understood the capabilities of the system, would recommend it to her friends who lives alone in separate apartments, if our "product" would became a reality. She also proposed that it would be useful if the sensor signalled when she has left TV or lamp turned on or she has left open the balcony door, windows of the apartment before leaving. She said it is good idea that system can send alarm if there is no movement for a while in the flat. She thinks the reminder function ("Dementia Diary") has no use in a retirement home, but would be good to have it if she still lived in her own apartment.
She is willing to take notes on paper as a "time sheet" about her daily activities. She does not use computer.

2
Room number is 305, 3rd floor, Danube side wing of the building. There is no internet, but it can be routed from an office located on the other side of the corridor.
Aunt **E.** retired accountant. She lives in the retirement home since six years, kind, communicative lady. Her state of health allows her to go out of home, travelling to her children, which takes for a few days. She sometimes ails because of her heart disease. She likes music, literature, writes books, and she is a permanent author of the

local newspaper.
She welcomed that there would be sensors in her room too.
She takes notes on our paper based “time sheet” about her daily activities and movement with pleasure.

We surveyed the rooms, looked for potential location of sensors, and took photographs.
The two apartments are very cluttered, especially aunt **E.**, who lives in smaller place. The place means a bedroom-living room and a bathroom-toilet combinations. The good news is that the bathroom and toilet undivided, only one residential uses it.
The sensors may be mounted on the front of the curtain cornice (wooden) and the door frame with double-sided adhesive tape. However, there is no wooden surface around the bed, so the two motion detector used for the bed can be mounted only on the wall. **B**. head nurse has not been taken aback by drilling the wall (gypsum), but resident of that living room should also allow it.
The contact sensors can be also mounted with sticking. Aunt **E**.'s quarters have a refrigerator, but opening of it gives no relevant information, because she usually eats in the common areas.
Locating the Home Gateway (PC) in Aunt **E**.'s residence is critical. If the Home Gateway is a netbook or notebook, it can be placed under the cabinet. It is questionable, however, that the netbook has enough resources to run the programs.

The observed electrical equipments can be TV, reading lamps, radio. Aunt **E**. used to read in the evenings on the sofa or in bed.

After having got to know the candidates we had a talk with **B**. She again offered to help us in testing.

In early January we sent a sketch of the agreements:
On the one hand, agreement with the **K.D.** retirement home.
On the other hand, an Ethical Policy – with the residents participating in the testing.

After negotiations, on second half of January we are going to sign them.

We assigned February as installation time. The experiment is going to take six weeks. The inference algorithm can be tested in the patterns of different behaviours of the two subjects.

Visit three:

8th of February, 2012. afternoon **N**. and **G**. met aunt **K.** and **B**. main nurse.

Director **P**. and **N**. project manager signed the agreement between **K.D.** retirement home and Budapest University of Technology and Economics. Aunt **K.** signed the declaration for participation in testing.

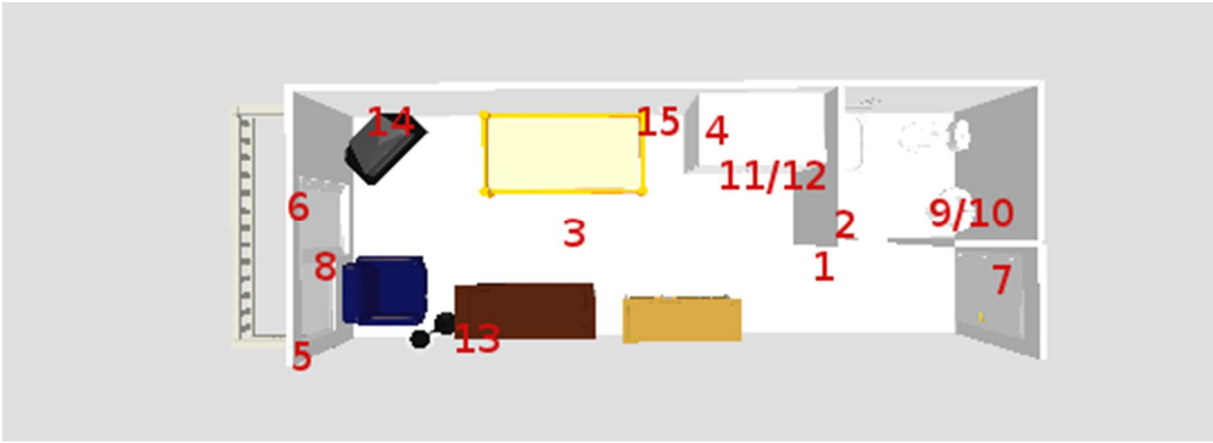
The head nurse said with regret that aunt **E**. withdrew, she did not want the sensors to be deployed in her quarters. The reason were worsening heart disease, and the problem of her being too often away to visit relatives.
We asked the main nurse to recommend someone else. **G**. constantly consults about persons of potential.

Discussed the tasks of sensor system to be installed in the middle of February.
Tentatively attached four sensors to ceiling and openings with Velcro fastening and bonding.
Aunt **K**. was discussed how to fill in diary in regard to form and information. The sample of the first one week was included, which may be modified according to experiences.

N. agreed with the system administrator of **K.D.** retirement home: **K.** on the installation date: 15th of February, Wednesday morning, nine o'clock.

Visit four:

15th of February, 2012. forenoon: **: N.**, **C.** and **P**. visited aunt **K.**
All the sensors were installed. We run into the problem of having too many sensors, thus the system didn't wanted to register all of them. After extensive search we identified the cause of the problem: We need extra routing devices if we install more than 6 devices.
After identifying of the problem we could quickly end the installation process, and everything worked fine.
Conclusion of the extended installation time: We cannot allow such problems to occur in real life, because it destroys the creditability of the system, and brings too much burden on the user.



Location of sensors:

nr.	place	serial number	HG_ID
1	entrance M	571F	26
2	bathroom M	44D7	48
3	beside bed M	570E	30
4	bed M	44D6	16
5	easy-chair M	5E8D	18
6	living room M	572C	28
7	door C	3F7B	40
8	balcony C	3F7A	42
9	bathroom H	40A7	35
10	bathroom T	40A7	34

11	living room H	38CE	58
12	living room T	38CE	52
13	easy-chair CONS		03
14	TV CONS		02
15	bed CONS		01

Visit five:

21st of February, 2012. afternoon: **N**., **C**, **P** and **G**. visited aunt **K.**
We continually checked remotely whether sensors are in operation and prepared the activity recognition software based on the information which sensor was placed where in the apartment. This software was installed and checked locally by playing through expected scenarios.

aunt **K.** believes that it would mean security for the elderly people, if the sensor indicated with flashes whenever detection is in process. It would bring fast discharge of the batteries at this devices, but a permanent installing this opinion should be considered.

She sincerely supports our work with her idea, outlining a multi-user system and a service provider "cooperative" tasks within a few minutes:
Technical supervision, personal care contribution at an event, food transportation, household tasks, etc..

We talked with aunt **K**. about how to fill the log. She grasped the point immediately, and she will write the main events. She would not like a siren or any local reminding function, therefore it has been uninstalled.

Log book 21st of February, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:00**											
Grooming, toilet usage	**08:30**	**08:45**	**16:20**	**16:25**	**21:35**	**21:40**						
Leaving the flat: to “from” column, please!	**15:40**	(coffee)										
Coming back to “to” column, please!		**16:00**										
Other person(s) in the flat	**11:30**	**12:00**	**13:10**	**13:11**	**15:25**	**16:00**	**18:00**	**18:25**	**13:10**			
Easy chair usage:	**11:30**	**12:00**										
Watching TV	**18:35**	**22:00**										
Going to bed at night: to “from” column, please!		**19:50**										
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system: **At night, 10 PM, after lighting out, the computer growled. T. nurse checked that it is not too warm. The BME has not informed me about this in advance. I know by this time, that it has been the fan noise. Instead of noising soft music would be better.** I talked about these events in the Home to T. nurse and doorman, and to G. from BME. NOTE: **clocks of Aunt K. are fast about 5-8 minutes compared to the computer's timer.**

Log book 22nd of February, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	To
Waking up: to “from” column, please!	**07:28**											
Grooming, toilet usage	**07:45**	**07:50**	**09:00**	**09:35**	**17:30**	**17:45**	**18:10**	**18:16**	**21:10**	**21:12**		
Leaving the flat: to “from” column, please!	**08:15**		**10:00**									
Coming back to “to” column, please!		**08:20**		**11:45**								
Other person(s) in the flat	**07:28**	**07:30**	**14:30**	**15:00**	**15:20**	**16:00**						
Easy chair usage:	**14:00**											
Watching TV	**17:30**	**21:50**										
Going to bed at night: to “from” column, please!		**18:00**										
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to: _____
To somebody from the BME:

Log book 23rd of February, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**09:00**											
Grooming, toilet usage	**09:00**	**09:30**										
Leaving the flat: to “from” column, please!	**09:13**		**10:45**		**11:20**		**19:00**					
Coming back to “to” column, please!		**09:18**		**11:10**		**11:45**		**19:10**				
Other person(s) in the flat	**11:50**	**12:15**	**13:50**	**14:10**	**K.**							
Easy chair usage:												
Watching TV	**17:00**											
Going to bed at night: to “from” column, please!		**17:00**										
Other events: **K. administrator dealt with the computer from 13:50 to 14:10**												

Today I have had the following pleasant / unpleasant experiences with the system: **K. administrator dealt with the computer from 13:50 to 14:10**
I talked about these events in the Home to: _____
To somebody from the BME: G., twice

Log book 24th of February, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**07:45**											
Grooming, toilet usage	**09:00**	**09:30**	**12:40**	**12:45**	**16:15**	**16:18**	**22:10** **19:57**	**22:15** **20:02**				
Leaving the flat: to “from” column, please!	**08:00**		**10:15**		**12:00**		**17:40** **17:00**					
Coming back to “to” column, please!		**08:05**		**11:00**		**12:30** **13:30**		**19:15**				
Other person(s) in the flat	**13:50**	**14:40**	**14:50**	**16:10**								
Easy chair usage:	**08:40**	**08:55**										
Watching TV	**19:30**											
Going to bed at night: to “from” column, please!		**20:00**										
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system: **the computer quietly lit at night**
I talked about these events in the Home to: _____
To somebody from the BME: G.

Log book 25th of February, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**09:30** **7:30**											
Grooming, toilet usage	**09:35** **10:40**	**10:00** **10:48**	**14:40**	**15:10**	**17:40**	**17:45**						
Leaving the flat: to “from” column, please!	**14:00**		**15:15**									
Coming back to “to” column, please!		**14:30**		**16:45**								
Other person(s) in the flat	**10:00**	**10:05**										
Easy chair usage:	**10:05**	**13:30**										
Watching TV	**17:55**											
Going to bed at night: to “from” column, please!		**17:45**										
Other events: **I was indisposed, went to bed early**												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to: _____
To somebody from the BME: _____

Log book 26th of February, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:10**											
Grooming, toilet usage	**08:30**		**10:00**	**10:25**	**14:30**	**14:33**						
Leaving the flat: to “from” column, please!	**09:00**		**10:30**		**11:35**		**12:30**		**14:40**			
Coming back to “to” column, please!		**09:50 9:12**		**11:00**		**11:37**		**12:35**		**14:45**		
Other person(s) in the flat	**07:45**	**07:46**	**11:45**	**11:46**	**12:00**	**12:20**	**15:42**	**16:35**				
Easy chair usage:	**09:30**	**09:45**										
Watching TV	**19:30**											
Going to bed at night: to “from” column, please!		**19:15**										
Other events: **The night passed quietly.**												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to: _____
To somebody from the BME: G. on phone, **after calling I decided I would log more precisely the date of somebody's coming in and going out**

Log book 27th of February, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:45**											
Grooming, toilet usage	**09:20**	**09:40**	**13:30**	**13:40**	**16:10**	**16:14**						
Leaving the flat: to “from” column, please!	**10:00**		**14:00**									
Coming back to “to” column, please!		**10:40**		**15:10**								
Other person(s) in the flat	**10:40**	**10:43**	**16:14**	**16:25**								
Easy chair usage:	**13:30**	**15:12**										
Watching TV	**18:10**											
Going to bed at night: to “from” column, please!		**19:10**										
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to: _____
To somebody from the BME: G.

Log book 28th of February, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**07:45**											
Grooming, toilet usage	**08:15**	**08:30**	**09:30**	**09:45**								
Leaving the flat: to “from” column, please!	**07:45**		**10:00**		**13:25**		**14:00**					
Coming back to “to” column, please!		**07:50**		**10:45**		**13:35**		**14:55**				
Other person(s) in the flat	**11:40**	**11:42**										
Easy chair usage:	**10:48**	**13:00**										
Watching TV	**18:00**											
Going to bed at night: to “from” column, please!		**18:00**										
Other events: **I was indisposed, went to bed early**												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to: _____
To somebody from the BME: G.

Log book 29th of February, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**07:50**											
Grooming, toilet usage												
Leaving the flat: to “from” column, please!												
Coming back to “to” column, please!												
Other person(s) in the flat	**07:45**	**07:47**	**13:45**	**15:20**								
Easy chair usage:	**13:30**	**15:00**										
Watching TV	?											
Going to bed at night: to “from” column, please!		**?**										
Other events: **N. and G. was here afternoon** **Events that occurs after 15:20 will be recorded from the next week's log book**												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to: _____
To somebody from the BME: G., N.

Visit six:

29th of February, 2012. afternoon **N**. and **G**. visited aunt **K.**
We checked the operation of sensors – everything worked fine. We discussed the events recorded in the log and their interpretation. We handed over the new log forms ranged from 29th of February to 7th of March. Registration way has been specified.
G. recorded diary of aunt **K**.

N. and **P.** compared diary to logged data series of the relevant computer program.
RESULT: analysis of data detected by sensors shows about 65 per cent equality to aunt K.'s diary. Some mismatch was caused by wrong delay time settings in the recognition tool, but most of them was caused by not taking note of an activity, or giving a wrong timeperiod to it.

Log book 1st of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:00**											
Grooming, toilet usage	**08:00**	**08:45**	**15:51**	**15:55**	**18:00**	**18:10**						
Leaving the flat: to “from” column, please!	**09:00**		**16:35**									
Coming back to “to” column, please!		**11:30**		**17:55**								
Other person(s) in the flat	**11:30**	**11:45**										
Easy chair usage:	**13:25**	**?**										
Watching TV	**19:00**	**21:25**										
Going to bed at night: to “from” column, please!		**18:40**										
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT: forenoon Aunt K. was at spectacle-maker at Vác.

Log book 2nd of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**09:00**											
Grooming, toilet usage	**09:30**	**10:15**	**11:20**	**11:25**								
Leaving the flat: to “from” column, please!	**10:35**		**12:08**		**14:20**		**15:15**					
Coming back to “to” column, please!		**11:15**		**12:10**		**14:23**		**15:30**				
Other person(s) in the flat	**08:00**	**08:02**	**14:10**	**14:15**	**14:24**	**15:10**	**15:40**	**16:05**				
Easy chair usage:	**11:30**	**?**										
Watching TV	**17:40**	**?**										
Going to bed at night: to “from” column, please!		**17:40**										
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT:

Log book 3rd of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:20**											
Grooming, toilet usage	**09:10**	**10:00**	**17:10**	**17:13**								
Leaving the flat: to “from” column, please!	**10:50**		**13:40**									
Coming back to “to” column, please!		**11:20**		**14:10**								
Other person(s) in the flat	**07:45**	**07:47**	**16:45**	**16:48**								
Easy chair usage:	**11:22**	**14:15**										
Watching TV	**11:55**	**12:40**	**17:15**	**21:25**								
Going to bed at night: to “from” column, please!		**18:25**										
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME:
COMMENT:

Log book 4th of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:25**		**09:50**	**?**								
Grooming, toilet usage	**08:27**	**?**	**10:25**	**10:45**	**12:42**	**12:45**	**17:35**	**17:40**	**18:00**	**?**		
Leaving the flat: to “from” column, please!												
Coming back to “to” column, please!												
Other person(s) in the flat	**07:45**	**?**	**14:10**	**?**	**17:30**	**?**						
Easy chair usage:	**12:46**	**?**										
Watching TV	**18:00**	**?**										
Going to bed at night: to “from” column, please!		**18:10**										
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME:
COMMENT:

Log book 5th of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:30**											
Grooming, toilet usage	**09:10**	**09:50**										
Leaving the flat: to “from” column, please!	**10:30**		**14:00**		**16:20**							
Coming back to “to” column, please!		**11:10**		**15:20**		**16:40**						
Other person(s) in the flat	**08:00**	**08:02**	**11:45**	**?**	**12:00**	**12:15**	**16:42**	**16:43**				
Easy chair usage:	**15:22**	**?**										
Watching TV	**19:00**	**?**										
Going to bed at night: to “from” column, please!		**18:30**										
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME:
COMMENT:

Log book 6th of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**07:30**											
Grooming, toilet usage	**08:30**	**08:50**										
Leaving the flat: to “from” column, please!	**10:20**		**11:20**									
Coming back to “to” column, please!		**10:52**		**?**								
Other person(s) in the flat	**07:45**	**07:46**	**10:00**	**10:15**								
Easy chair usage:												
Watching TV												
Going to bed at night: to “from” column, please!												
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME:
COMMENT:

Visit seven:

6th of March, 2012. afternoon **N**. visited aunt **K**.

We checked the operation of sensors – everything worked fine. We discussed the events recorded in the log and their interpretation. We handed over the new log forms ranged from 8th to 15th of March. Registration way has been specified.

G. recorded diary of aunt **K**.

Log book 7th of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:45**											
Grooming, toilet usage	**10:15**	**10:40**	**12:35**	**12:45**								
Leaving the flat: to “from” column, please!	**10:45**		**12:00**		**13:00**		**16:30**					
Coming back to “to” column, please!		**11:05**		**12:30**		**13:15**		**17:10**				
Other person(s) in the flat	**07:45**	**07:46**	**11:45**	**11:46**	**17:30**	**18:25**						
Easy chair usage:		**?**										
Watching TV	**19:15**	**?**										
Going to bed at night: to “from” column, please!		**19:50**										
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: N.
COMMENT: in the morning, noon and evening after meal I take the tray to the opposite kitchen.

Log book 8th of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**09:00**											
Grooming, toilet usage	**09:00**	**09:45**										
Leaving the flat: to “from” column, please!												
Coming back to “to” column, please!												
Other person(s) in the flat	**08:00**	**08:02**										
Easy chair usage:												
Watching TV												
Going to bed at night: to “from” column, please!												
Other events: **writing the log has been prevented by my trying to help finding new job to a young masseur**												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME:
COMMENT:

Log book 9th of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**07:45**											
Grooming, toilet usage	**07:45**	**07:55**	**18:10**	**18:18**								
Leaving the flat: to “from” column, please!	**09:00**		**15:20**									
Coming back to “to” column, please!		**10:15**		**15:50**								
Other person(s) in the flat	**07:30**	**07:32**	**10:30**	**11:00**	**11:45**	**11:45**	**16:45**	**16:50 ?**				
Easy chair usage:	**12:30**	**?**										
Watching TV	**12:00**	**?**	**19:30**	**?**								
Going to bed at night: to “from” column, please!		**19:30**										
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME:
COMMENT:

Log book 10th of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**07:45**											
Grooming, toilet usage	**08:40**	**09:00**										
Leaving the flat: to “from” column, please!	**10:00**		**12:05**		**14:00**							
Coming back to “to” column, please!		**11:20**		**12:28**		**17:25**						
Other person(s) in the flat	**07:40**	**07:45**	**11:40**	**11:42**								
Easy chair usage:	**12:30**	**?**	**17:30**	**?**								
Watching TV	**17:26**	**?**										
Going to bed at night: to “from” column, please!		**19:00**										
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME:
COMMENT:

Log book 11th of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!												
Grooming, toilet usage												
Leaving the flat: to “from” column, please!												
Coming back to “to” column, please!												
Other person(s) in the flat												
Easy chair usage:												
Watching TV												
Going to bed at night: to “from” column, please!												
Other events: **I was indisposed, lying in bed all day. They brought food tree times the day. G. had come at about 2 PM, and leaved in 15 minutes.**												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G., who had come back from Austria and called me on
COMMENT:

Log book 12th of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**07:45**											
Grooming, toilet usage	**08:00**	**08:10**										
Leaving the flat: to “from” column, please!	**09:15**		**12:45**		**14:15**		**16:00**					
Coming back to “to” column, please!		**11:13**		**12:55**		**14:45**		**16:15**				
Other person(s) in the flat	**07:30**	**07:32**										
Easy chair usage:	**11:14**	**?**	**12:56**	**?**								
Watching TV	**18:50**	**?**										
Going to bed at night: to “from” column, please!		**18:50**										
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT:

Log book 13th of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**07:45**											
Grooming, toilet usage	**08:00**	**08:50**										
Leaving the flat: to “from” column, please!	**08:55**		**11:22**		**12:25**							
Coming back to “to” column, please!		**10:10**		**11:25**		**13:50**						
Other person(s) in the flat	**07:45**	**07:46**	**11:19**	**11:20**	**14:30**	**16:30**	**15:10**	**15:20**				
Easy chair usage:	**11:30**	**?**	**17:30**	**?**								
Watching TV	**18:30**	**?**										
Going to bed at night: to “from” column, please!		**19:00**										
Other events: **afternoon between half to three and a half to five G. and N. was here, we discussed everything. Afternoon between three pasts 10 and tree pasts 20 B. was here, we talked about the next possible pilot location. I suggest that the elderly may have a bracelet, with two types of alarm options: if a heart attack coming, and when burglars come.**												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G., N.
COMMENT:

Visit eight:

13th of March, 2012. afternoon **N**.and **G**. visited aunt **K**.
We checked the operation of sensors – everything worked fine.
We discussed the events recorded in the log and their interpretation. We handed over the new log forms ranged from 16th to 21th of March.
G. recorded diary of aunt **K**.

Unfortunately, We did not meet uncle **I**., who has been indisposed, and second pilot installation to his apartment from middle of April will not be allowed. However, We got to know aunt **N**., who could be the second resident of next test site.

Log book 14th of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**07:42**											
Grooming, toilet usage	**08:25**	**08:45**										
Leaving the flat: to “from” column, please!	**07:55**		**09:00**		**11:50**		**16:00**					
Coming back to “to” column, please!		**08:00**		**10:30**		**11:55**		**17:00**				
Other person(s) in the flat	**07:40**	**07:42**	**11:30**	**11:32**	**13:10**	**13:12**	**17:00**	**18:00**				
Easy chair usage:	**10:31**	**?**	**12:00**	**?**								
Watching TV	**18:30**	**?**										
Going to bed at night: to “from” column, please!		**18:35**										
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT: this afternoon at three o'clock the maid knocked on the thermometer, the battery fell out. She putted the battery back and it works

Log book 15th of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:15**											
Grooming, toilet usage	**08:28**	**08:30**	**10:00**	**11:15**	**13:35**	**13:53**						
Leaving the flat: to “from” column, please!	**08:30**		**12:30**		**18:00**							
Coming back to “to” column, please!		**08:40**		**12:32**		**18:20**						
Other person(s) in the flat	**08:00**	**08:02**	**12:00**	**12:02**	**17:00**	**17:01**						
Easy chair usage:	**13:55**	**?**										
Watching TV	**14:50**	**16:00**	**18:30**	**?**								
Going to bed at night: to “from” column, please!		**18:35**										
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME:
COMMENT: in the morning, noon and evening after meal I took the tray to the opposite kitchen.

Log book 16th of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:30**											
Grooming, toilet usage	**08:30**		**09:00**	**10:10**	**13:45**	**13:50**						
Leaving the flat: to “from” column, please!	**10:20**											
Coming back to “to” column, please!		**11:50**										
Other person(s) in the flat	**08:00**	**08:01**	**11:30**	**11:32**	**13:15**	**13:30**	**17:00**	**17:02**				
Easy chair usage:	**11:16**	**?**	**13:00**	**?**								
Watching TV	**17:45**	**?**	**18:30**	**?**								
Going to bed at night: to “from” column, please!		**18:30**										
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT:

Log book 17th of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**07:45**											
Grooming, toilet usage	**07:50**		**09:00**	**10:00**								
Leaving the flat: to “from” column, please!	**10:00**		**12:15**									
Coming back to “to” column, please!		**11:10**		**12:20**								
Other person(s) in the flat	**07:40**	**07:41**	**11:45**	**11:47**	**16:25**	**16:25**						
Easy chair usage:	**11:12**	**?**										
Watching TV	**17:15**	**?**										
Going to bed at night: to “from” column, please!		**17:15**										
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME:
COMMENT:

Log book 18th of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:45**											
Grooming, toilet usage	**08:45**		**09:20**	**09:25**	**10:00**	**10:30**	**14:25**					
Leaving the flat: to “from” column, please!	**10:45**		**11:58**		**14:45**		**16:10**		**16:58**			
Coming back to “to” column, please!		**10:55**		**12:00**		**16:00**		**16:24**		**17:00**		
Other person(s) in the flat	**07:45**	**07:46**	**11:45**	**11:45**	**16:20**	**16:21**						
Easy chair usage:	**11:00**	**?**										
Watching TV	**17:50**	**?**										
Going to bed at night: to “from” column, please!		**18:00**										
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT:

Log book 19th of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**07:45**											
Grooming, toilet usage	**08:20**	**08:35**										
Leaving the flat: to “from” column, please!	**08:00**		**09:00**		**11:15**		**13:00**					
Coming back to “to” column, please!		**08:20**		**10:55**		**11:40**		**14:00**				
Other person(s) in the flat	**07:45**	**07:46**	**11:45**	**11:45**	**16:45**	**16:46**						
Easy chair usage:	**08:40**	**09:00**										
Watching TV	**18:30**	**?**										
Going to bed at night: to “from” column, please!		**18:30**										
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT:

Log book 20th of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**07:45**											
Grooming, toilet usage	**08:00**		**08:26**	**09:00**								
Leaving the flat: to “from” column, please!	**09:00**		**12:10**		**12:30**							
Coming back to “to” column, please!		**11:00**		**12:14**		**13:15**						
Other person(s) in the flat	**07:45**	**07:46**	**11:30**	**11:31**	**11:45**	**?**	**14:00**	**16:00**				
Easy chair usage:												
Watching TV												
Going to bed at night: to “from” column, please!												
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT: G. and N. was here today in the afternoon from two to four

Visit nine:

20th of March, 2012. afternoon **N**.and **G**. visited aunt **K**.
We checked the operation of sensors – everything worked fine.
We discussed the events recorded in the log and their interpretation. We handed over the new log forms ranged from 21th to 27th of March.
G. recorded diary of aunt **K**.

We met again and talked to aunt **N**. Unfortunately, she evaluated that she is often out of her room, so her property would not be appropriate to be the site of the second pilot due in middle of April. It seems that likelihood of finding another apartament within the retirement home decreases, so we look at other options.
Last fall, we spoke to representatives of the A. A. retirement home about their possible participation in the test, unfortunately, they declared bankrupt in early March in 2012. Hundreds of inmate's existence became uncertain.

Log book 21th of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**07:15**											
Grooming, toilet usage	**07:30**		**08:00**	**08:20**	**13:15**	**13:20**						
Leaving the flat: to “from” column, please!	**09:00**		**12:10**		**15:00**							
Coming back to “to” column, please!		**11:00**		**12:13**		**17:30**						
Other person(s) in the flat	**07:45**	**07:47**	**11:10**	**11:10**	**11:35**							
Easy chair usage:	**13:00**		**15:00**									
Watching TV	**18:30**											
Going to bed at night: to “from” column, please!	**18:30**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME:
COMMENT:

Log book 22th of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:00**											
Grooming, toilet usage	**08:15**		**15:00**									
Leaving the flat: to “from” column, please!	**09:40**		**11:00**		**15:10**		**18:05**					
Coming back to “to” column, please!		**10:45**		**11:30**		**17:46**		**18:07**				
Other person(s) in the flat	**07:40**	**07:42**	**11:45**	**11:47**								
Easy chair usage:	**13:00**	**15:00**										
Watching TV	**18:30**											
Going to bed at night: to “from” column, please!	**18:30**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT:

Log book 23th of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**09:25**											
Grooming, toilet usage	**09:45**	**10:10**	**13:25**	**13:35**	**17:06**	**17:17**						
Leaving the flat: to “from” column, please!	**10:30**		**12:40**		**15:00**							
Coming back to “to” column, please!		**11:00**		**13:00**		**17:50**						
Other person(s) in the flat	**07:45**	**07:46**	**11:45**	**11:47**								
Easy chair usage:	**11:20**											
Watching TV	**18:30**											
Going to bed at night: to “from” column, please!	**18:30**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT:

Log book 24th of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:30**											
Grooming, toilet usage	**09:00**		**09:09**	**09:25**								
Leaving the flat: to “from” column, please!	**09:30**		**11:55**		**13:55**		**15:25**		**16:40**			
Coming back to “to” column, please!		**09:35**		**12:00**		**14:50**		**15:30**		**16:44**		
Other person(s) in the flat	**07:45**	**07:46**	**08:55**	**09:00**	**11:30**	**11:31**	**16:25**	**16:35**				
Easy chair usage:	**12.00**	**?**										
Watching TV	**17:20**											
Going to bed at night: to “from” column, please!	**17:25**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT:

Log book 25th of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:50**											
Grooming, toilet usage	**08:52**		**09:45**	**10:15**	**14:00**	**14:10**						
Leaving the flat: to “from” column, please!	**10:30**		**12:40**		**16:40**							
Coming back to “to” column, please!		**11:30**		**12:45**		**16:45**						
Other person(s) in the flat	**08:15**	**08:16**	**12:00**	**12:02**	**12:10**	**12:20**	**16:30**	**16:35**				
Easy chair usage:	**12:46**	**?**										
Watching TV	**18:50**											
Going to bed at night: to “from” column, please!	**18:40**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT:

Log book 26th of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**09:00**											
Grooming, toilet usage	**09:35**	**09:55**										
Leaving the flat: to “from” column, please!	**09:10**		**10:15**		**12:05**		**17:15**					
Coming back to “to” column, please!		**09:12**		**10:55**		**12:10**		**18:15**				
Other person(s) in the flat	**07:45**	**07:46**	**11:45**	**11:47**	**13:15**	**14:35**	**17:10**	**17:12**				
Easy chair usage:	**12:15**	**?**										
Watching TV	**18:30**											
Going to bed at night: to “from” column, please!	**18:45**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT:

Log book 27th of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:00**											
Grooming, toilet usage	**08:30**		**12:25**	**12:30**								
Leaving the flat: to “from” column, please!	**08:10**		**09:20**		**10:35**		**17:05**					
Coming back to “to” column, please!		**08:13**		**10:30**		**11:10**		**17:55**				
Other person(s) in the flat	**07:45**	**07:46**	**11:39**	**11:40**	**16:45**	**16:46**						
Easy chair usage:	**11:12**	**?**	**12:40**	**?**								
Watching TV	**18:30**											
Going to bed at night: to “from” column, please!	**?**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME:
COMMENT:

Log book 28th of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:15**											
Grooming, toilet usage	**08:15**		**08:30**	**08:45**	**12:45**	**12:55**						
Leaving the flat: to “from” column, please!	**08:20**		**09:20**		**12:15**							
Coming back to “to” column, please!		**08:23**		**09:45**		**12:18**						
Other person(s) in the flat	**07:45**	**07:46**	**11:45**	**11:46**	**13:45**	**15:45**						
Easy chair usage:	**12:45**											
Watching TV	**?**											
Going to bed at night: to “from” column, please!	**?**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT: G. and N. was here today in the afternoon between two and three-quarter-quarter to four

Visit ten:

28th of March, 2012. afternoon **N**. and **G.** visited aunt **K**.
We checked the operation of sensors – everything worked fine.
We discussed the events recorded in the log and their interpretation. We handed over the new log forms ranged from 28th of March to 3rd of April.
G. recorded diary of aunt **K**.

There were no more possible candidates, **B**. head nurse was also in hurry.

Log book 28th of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:30**											
Grooming, toilet usage	**08:15**		**08:30**	**08:45**	**12:45**	**12:55**						
Leaving the flat: to “from” column, please!	**08:20**		**09:20**		**12:15**							
Coming back to “to” column, please!		**08:23**		**09:45**		**12:18**						
Other person(s) in the flat	**07:45**	**07:46**	**11:45**	**11:46**	**13:45**	**15:45**	**17:15**	**17:30**				
Easy chair usage:	**12:45**											
Watching TV	**18:30**											
Going to bed at night: to “from” column, please!	**18:30**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME:
COMMENT: G. and N. was here today in the afternoon between a quarter to three and a quarter to four

Log book 29th of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:45**											
Grooming, toilet usage	**08:45**		**09:00**	**09:15**	**13:45**	**13:50**						
Leaving the flat: to “from” column, please!	**10:35**		**12:20**		**14:45**							
Coming back to “to” column, please!		**10:55**		**12:45**		**17:20**						
Other person(s) in the flat	**07:45**	**07:46**	**11:45**	**12:25**								
Easy chair usage:	**12:30**											
Watching TV	**18:30**											
Going to bed at night: to “from” column, please!	**18:00**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME:
COMMENT:

Log book 30th of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:30**											
Grooming, toilet usage	**08:30**		**09:45**	**10:10**	**17:20**	**?**	**18:00**	**18:15**				
Leaving the flat: to “from” column, please!	**09:00**		**10:25**		**12:07**		**13:45**					
Coming back to “to” column, please!		**09:50**		**10:45**		**12:10**		**14:20**				
Other person(s) in the flat	**07:45**	**07:46**	**11:10**	**11:50**	**13:15**	**13:20**	**16:45**	**17:00**				
Easy chair usage:	**12:12**											
Watching TV	**18:30**											
Going to bed at night: to “from” column, please!	**18:20**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT:

Log book 31th of March, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:15**											
Grooming, toilet usage	**08:15**		**09:13**	**09:35**	**12:45**	**12:48**						
Leaving the flat: to “from” column, please!	**08:45**		**13:05**		**16:35**							
Coming back to “to” column, please!		**08:48**		**13:08**		**16:38**						
Other person(s) in the flat	**07:45**	**07:46**	**11:45**	**11:47**	**13:20**	**13:25**	**16:20**	**16:21**				
Easy chair usage:	**13:30**											
Watching TV	**17:25**											
Going to bed at night: to “from” column, please!	**18:00**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME:
COMMENT:

Log book 1st of April, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:00**											
Grooming, toilet usage	**08:20**		**09:00**	**09:20**	**12:25**	**12:30**						
Leaving the flat: to “from” column, please!	**08:13**		**10:35**		**12:05**		**14:45**		**17:15**			
Coming back to “to” column, please!		**08:15**		**10:56**		**12:08**		**16:00**		**17:49**		
Other person(s) in the flat	**07:45**	**07:46**	**08:50**	**08:55**	**10:00**	**10:30**	**11:45**	**11:46**	**16:00**	**16:15**	**16:45**	**16:46**
Easy chair usage:	**12:26**	?										
Watching TV	**13:05**	?	**18:50**	?								
Going to bed at night: to “from” column, please!	**17:55**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT:

Log book 2nd of April, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:30**											
Grooming, toilet usage	**09:00**	**09:30**	**13:20**	**13:50**								
Leaving the flat: to “from” column, please!	**08:45**		**10:00**		**12:10**		**12:45**		**13:55**		**15:30**	
Coming back to “to” column, please!		**08:50**		**10:52**		**12:12**		**13:00**		**15:00**		**16:30**
Other person(s) in the flat	**07:45**	**07:46**	**09:45**	**09:50**	**11:45**	**11:46**						
Easy chair usage:	**16:30**	?										
Watching TV	**18:30**	?										
Going to bed at night: to “from” column, please!	**18:00**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME:
COMMENT:

Log book 3rd of April, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:10**											
Grooming, toilet usage	**08:12**		**09:30**	**10:00**	**18:15**	**18:20**						
Leaving the flat: to “from” column, please!	**08:30**		**10:10**		**12:15**		**14:50**					
Coming back to “to” column, please!		**08:32**		**11:30**		**12:17**		**16:20**				
Other person(s) in the flat	**07:45**	**07:46**	**11:30**	**11:45**	**16:45**	**16:46**						
Easy chair usage:	**12:20**	?										
Watching TV	**18:30**	?										
Going to bed at night: to “from” column, please!	**18:20**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME:
COMMENT: today there was a forum in the Home, where I told the essence of the sensor test, and how this will be useful to the public in the future

Log book 4th of April, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**09:30**											
Grooming, toilet usage	**09:30**	**10:00**	**13:50**	**13:55**								
Leaving the flat: to “from” column, please!	**09:50**		**11:40**		**13:00**		**14:32**		**15:15**			
Coming back to “to” column, please!		**09:52**		**11:45**		**13:50**		**14:40**		**16:45**		
Other person(s) in the flat	**07:45**	**07:46**	**11:25**	**11:30**								
Easy chair usage:	**14:15**	?										
Watching TV	**14:00**	?	**18:30**	?								
Going to bed at night: to “from” column, please!	**17:50**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT:

Log book 5th of April, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:00**											
Grooming, toilet usage	**08:20**	**08:50**										
Leaving the flat: to “from” column, please!	**09:20**		**09:50**									
Coming back to “to” column, please!		**09:23**		**10:10**								
Other person(s) in the flat	**07:30**	**07:32**	**10:00**	**12:00**								
Easy chair usage:	**10:00**	?										
Watching TV												
Going to bed at night: to “from” column, please!												
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME:
COMMENT: this morning J. G. from the BME was here

Visit eleven:

5th of April, 2012 afternoon **J**. and **G.** visited aunt **K**.
We checked the operation of sensors – everything worked fine.
We discussed the events recorded in the log and their interpretation. We handed over the new log forms ranged from 4th to 11th of April.
A few days ago they read the power consumption of the suite, but aunt **K**. did not know the result of measurement; we look it at the next visit. We will compensate her for any overconsumption.
G. recorded diary of aunt **K**..

J. talked to aunt **K**., and prepared a report.
We inquired at **B**. main nurse whether it would be useful to give a computer as a gift. Her opinion was that residents do not use the actual computer either, usually 2-3 people mail and surf with it. But it is possible that games developed by us for elderly people in the future will be tested in **K**.**D**. retirement home. **B**. has requested us to "attract their good reputation."
Another possible candidate: Mrs. **S**. But it is not agreed with the main nurse.

Log book 5th of April, 2012.

Aunt K.

Events	from	to	From	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:00**											
Grooming, toilet usage	**08:20**	**08:50**										
Leaving the flat: to “from” column, please!	**09:20**		**09:50**		**12:55**		**14:20**					
Coming back to “to” column, please!		**09:29**		**10:10**		**13:15**		**14:45**				
Other person(s) in the flat	**07:30**	**07:35**	**10:00**	**12:00**	**12:30**	**12:50**						
Easy chair usage:	**10:00**	**12:00**	**14:48**	**?**								
Watching TV	**18:30**											
Going to bed at night: to “from” column, please!	**18:00**											
Other events: today forenoon J. and G. from the BME was here												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: J. and G.
COMMENT: if I go to bed earlier, it is because I read in bed. I turn on TV at RTL news and turn off it at ending of Barátok közt (series). I watch that series out of habit. I rather listen to radio.

Log book 6th of April, 2012.

Aunt K.

Events	from	to	From	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:30**											
Grooming, toilet usage	**09:15**	**09:45**	**10:40**	**10:50**								
Leaving the flat: to “from” column, please!	**08:45**		**09:55**		**14:30**							
Coming back to “to” column, please!		**08:43**		**10:40**		**17:00**						
Other person(s) in the flat	**07:45**	**07:47**	**08:45**	**09:00**	**12:40**	**12:44**	**17:50**	**17:51**				
Easy chair usage:	**11:05**	**?**										
Watching TV	**11:30**	**12:25**	**18:30**	**?**								
Going to bed at night: to “from” column, please!	**18:15**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT:

Log book 7th of April, 2012.

Aunt K.

Events	from	to	From	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:45**											
Grooming, toilet usage	**10:15**	**10:25**	**12:00**	**12:04**	**14:40**	**14:45**						
Leaving the flat: to “from” column, please!	**08:55**		**11:00**		**12:05**							
Coming back to “to” column, please!		**09:00**		**11:35**		**12:08**						
Other person(s) in the flat	**08:30**	**08:32**	**09:15**	**10:00**	**11:45**	**11:46**	**13:30**	**14:00**	**16:40**	**16:42**		
Easy chair usage:	**12:10**	**?**										
Watching TV	**12:00**	**13:05**	**15:30**	**17:00**	**17:30**	**?**						
Going to bed at night: to “from” column, please!	**17:30**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME:
COMMENT:

Log book 8th of April, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**09:00**											
Grooming, toilet usage	**09:00**	**09:08**										
Leaving the flat: to “from” column, please!	**09:10**		**10:30**		**12:35**							
Coming back to “to” column, please!		**09:12**		**11:00**		**12:40**						
Other person(s) in the flat	**07:45**	**07:47**	**10:30**	**10:32**	**11:30**	**11:32**	**11:45**	**15:00**	**16:45**	**16:46**		
Easy chair usage:	**11:00**	**?**										
Watching TV	**14:00**	**15:00**	**19:30**	**?**	**20:05**	**?**						
Going to bed at night: to “from” column, please!	**19:30**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT:

Log book 9th of April, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:15**											
Grooming, toilet usage	**08:15**	**08:23**	**09:00**	**09:40**	**13:45**	**13:50**						
Leaving the flat: to “from” column, please!	**08:25**		**10:00**		**12:15**							
Coming back to “to” column, please!		**08:30**		**10:15**		**12:20**						
Other person(s) in the flat	**07:45**	**07:47**	**11:45**	**11:46**	**16:00**	**16:05**						
Easy chair usage:	**10:17**	**?**										
Watching TV	**10:40**	**11:30**	**16:20**	**?**	**18:30**	**?**						
Going to bed at night: to “from” column, please!	**19:25**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME:
COMMENT:

Log book 10th of April, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:45**											
Grooming, toilet usage	**08:45**	**08:47**	**09:10**	**09:15**	**09:30**	**09:55**						
Leaving the flat: to “from” column, please!	**09:00**		**10:00**		**15:45**							
Coming back to “to” column, please!		**09:02**		**10:40**		**17:00**						
Other person(s) in the flat	**07:45**	**07:47**	**11:30**	**11:32**								
Easy chair usage:	**10:42**	**?**										
Watching TV	**18:30**	**?**										
Going to bed at night: to “from” column, please!	**18:30**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT:

Log book 11th of April, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:45**											
Grooming, toilet usage	**09:04**	**09:06**	**09:20**	**09:50**	**17:35**	**18:00**						
Leaving the flat: to “from” column, please!	**09:00**		**10:15**		**12:10**		**15:40**					
Coming back to “to” column, please!		**09:02**		**10:45**		**12:15**		**16:00**				
Other person(s) in the flat	**07:45**	**07:47**	**08:30**	**08:32**	**09:52**	**09:55**	**11:45**	**11:48**	**16:45**	**16:46**		
Easy chair usage:	**10:45**	**?**										
Watching TV	**18:30**	**?**										
Going to bed at night: to “from” column, please!	**18:10**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME:
COMMENT:

Log book 12th of April, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:10**											
Grooming, toilet usage	**08:12**	**08:15**	**09:35**	**10:00**								
Leaving the flat: to “from” column, please!	**08:20**		**10:05**		**10:52**							
Coming back to “to” column, please!		**08:22**		**10:25**		**11:00**						
Other person(s) in the flat	**07:45**	**07:47**	**10:40**	**10:50**	**14:00**	**16:05**						
Easy chair usage:	**10:30**	**?**										
Watching TV												
Going to bed at night: to “from” column, please!												
Egyéb Events: **today N. read the volt-ammeter: 86 kW. On 13th of February it was 1 kW. Over 30 kW per month shall be reimbursedthe extra consumption. After dismounting sensors we calculate the differences and G. will pay it.**												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G. and N.
COMMENT: today G. and N. was here, we talked well. The sensors and the computer works fine.

10th of April We spoke to: aunt **K**., she greets **N**. and wait for us on 12th, Thursday afternoon.

- **B.** main nurse was not really proposing us to deploy the sensors into quarters of Mrs. **S**., because she is perhaps not in the mental state to keep activity log precisely.
- **F**. is unfortunately still in hospital, his rehabilitation delays, perhaps next week he can go home to his apartment – Budapest. He promised to write an email when he is at home. He would undertake the presence of sensors in his home for a few weeks. The apartment has one room, he is at home alone at daylight, and there is a caregiver in the flat in the evening and at night. Until 12. June he didn't write any news, so the test will not be in his apartment.

Visit twelve:

12th of April, 2012. afternoon **N**. and **G.** visited aunt **K**.
We checked the operation of sensors – everything worked fine.
We discussed the events recorded in the log and their interpretation. We handed over the new log forms ranged from 12th to 19th of April.
G. recorded diary of aunt **K.** dated one week earlier.

We discussed with **B**. main nurse that it is not practical to install sensors into quarters of Mrs. **S**. because the lady is not a mental condition to keep the log reliably. Appointment about meeting between **K**.**D**. Retirement Home and leaders of the EMT is in progress.

Log book 12th of April, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:10**											
Grooming, toilet usage	**08:12**	**08:15**	**09:35**	**10:00**								
Leaving the flat: to “from” column, please!	**08:20**		**10:05**		**10:52**		**16:45**					
Coming back to “to” column, please!		**08:22**		**10:25**		**11:00**		**16:47**				
Other person(s) in the flat	**07:45**	**07:47**	**10:40**	**10:50**	**14:00**	**16:15**						
Easy chair usage:	**10:30**	**?**	**14:00**	**?**								
Watching TV	**18:30**	**?**										
Going to bed at night: to “from” column, please!	**18:30**											
Other events: **information from Aunt K.: Aunt N. did not undertake to test the sensor, because she had gone in fear of being tracked by her relatives, what to do and when**												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G. and N.
COMMENT: today G. and N. was here, we talked well. The sensors and computer works fine.

Log book 13th of April, 2012.

Aunt K.

Events	from	to	from	to	from	To	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:45**											
Grooming, toilet usage	**08:50**	**09:00**										
Leaving the flat: to “from” column, please!	**09:10**		**10:15**		**15:15**							
Coming back to “to” column, please!		**09:12**		**11:00**		**16:55**						
Other person(s) in the flat	**08:00**	**08:01**	**08:10**	**08:15**	**11:15**	**11:30**	**13:00**	**13:50**				
Easy chair usage:	**17:05**	**?**										
Watching TV	**18:30**	**?**										
Going to bed at night: to “from” column, please!	**18:30**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT:

Log book 14th of April, 2012.

Aunt K.

Events	from	to	From	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:30**											
Grooming, toilet usage	**08:35**	**08:40**	**09:10**	**09:50**								
Leaving the flat: to “from” column, please!	**08:55**		**10:15**		**16:50**							
Coming back to “to” column, please!		**09:00**		**11:30**		**17:00**						
Other person(s) in the flat	**08:00**	**08:01**	**11:45**	**11:47**	**17:45**	**17:47**						
Easy chair usage:	**11:30**	**?**										
Watching TV	**13:55**	**15:00**	**17:00**	**?**								
Going to bed at night: to “from” column, please!	**18:00**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME:
COMMENT:

Log book 15th of April, 2012.

Aunt K.

Events	from	to	From	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:20**											
Grooming, toilet usage	**08:22**	**08:25**	**09:00**	**09:45**	**14:02**	**14:05**						
Leaving the flat: to “from” column, please!	**08:40**		**12:15**		**12:25**		**14:45**					
Coming back to “to” column, please!		**08:43**		**12:18**		**12:35**		**16:20**				
Other person(s) in the flat	**08:00**	**08:01**	**11:45**	**11:47**	**16:20**	**16:30**						
Easy chair usage:	**12:47**	**?**										
Watching TV	**18:30**	**?**										
Going to bed at night: to “from” column, please!	**18:30**											
Egyéb Events: **at 14:02 sensor flashed red in the bathroom. I observed this today for the first time, while the lamp was off in the bathroom.**												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME:
COMMENT:

Log book 16th of April, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**09:00**											
Grooming, toilet usage	**09:30**	**09:32**	**09:40**	**10:05**	**12:15**	**12:20**						
Leaving the flat: to “from” column, please!	**10:10**		**10:15**		**12:05**		**17:45**					
Coming back to “to” column, please!		**10:12**		**10:50**		**12:10**		**17:48**				
Other person(s) in the flat	**08:00**	**08:01**	**09:10**	**09:15**	**11:45**	**11:46**	**14:00**	**17:00**				
Easy chair usage:	**12:25**	**?**										
Watching TV	**18:30**	**?**										
Going to bed at night: to “from” column, please!	**18:30**											
Other Events: **G. called me, I also said her that there has been no red signal in the bathroom since yesterday.**												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT:

Log book 17th of April, 2012.

Aunt K.

Events	from	to	From	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:15**											
Grooming, toilet usage	**08:20**	**08:22**	**09:00**	**09:30**								
Leaving the flat: to “from” column, please!	**09:45**		**15:00**									
Coming back to “to” column, please!		**10:15**		**16:45**								
Other person(s) in the flat	**08:00**	**08:01**	**11:40**	**11:42**								
Easy chair usage:	**10:16**	**?**										
Watching TV	**18:30**	**?**										
Going to bed at night: to “from” column, please!	**18:30**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME:
COMMENT:

Log book 18th of April, 2012.

Aunt K.

Events	from	to	From	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:30**											
Grooming, toilet usage	**08:45**	**08:47**	**09:10**	**09:40**								
Leaving the flat: to “from” column, please!	**09:05**		**10:15**		**12:10**		**16:05**					
Coming back to “to” column, please!		**09:08**		**10:45**		**12:13**		**16:25**				
Other person(s) in the flat	**07:45**	**07:46**	**11:45**	**11:46**	**16:25**	**16:30**	**17:00**	**?**				
Easy chair usage:	**12:15**	**?**										
Watching TV	**18:30**	**?**										
Going to bed at night: to “from” column, please!	**18:25**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT:

Visit thirteen:

19th of April, 2012. afternoon **N**. and **G.** visited aunt **K**.
We checked the operation of sensors – everything worked fine - even sensors can withstand
We discussed the events recorded in the log and their interpretation. We handed over the new log forms ranged from 19th to 26th of April. We talked about the time of dismounting of sensors. Aunt K. can not against their staying mounted 1-2 weeks longer.
G. recorded diary of aunt **K** dated one week earlier.

We accidentally run into **P. K.** and discussed with him that on next Tuesday morning at 11 o'clock he would come to EMT. **N**. would send him a map of our location.

We will report the actual test results to him and the miracle named aunt **K**.. She is interested in possibly future matters of elderly intellectual freshness maintenance / detection.
Great landscaping is going on, it is not impossible that they will build - and apply for.

Log book 19th of April, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**07:45**											
Grooming, toilet usage	**07:50**	**07:53**	**08:30**	**09:00**	**13:00**	**13:05**						
Leaving the flat: to “from” column, please!	**08:20**		**10:00**		**12:00**							
Coming back to “to” column, please!		**08:24**		**11:15**		**12:05**						
Other person(s) in the flat	**07:45**	**07:46**	**09:00**	**09:45**	**11:40**	**11:42**	**14:00**	**16:00**	**16:45**	**16:46**		
Easy chair usage:	**12:10**	**?**										
Watching TV	**18:30**	**?**										
Going to bed at night: to “from” column, please!	**18:15**											
Other events: today G. and N. was here, we talked very well.												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME:
COMMENT:

Log book 20th of April, 2012.

Aunt K.

Events	from	to	From	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:15**											
Grooming, toilet usage	**08:12**	**08:15**	**08:45**	**09:15**								
Leaving the flat: to “from” column, please!	**08:20**		**10:00**		**12:08**		**15:15**					
Coming back to “to” column, please!		**08:23**		**10:25**		**12:10**		**16:45**				
Other person(s) in the flat	**07:45**	**07:46**	**08:00**	**08:10**	**11:30**	**12:00**	**16:45**	**16:47**				
Easy chair usage:	**10:25**	**?**	**12:12**	**?**	**17:00**	**?**						
Watching TV	**18:30**	**?**										
Going to bed at night: to “from” column, please!	**18:30**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT:

Log book 21st of April, 2012.

Aunt K.

Events	from	to	From	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:00**											
Grooming, toilet usage	**08:02**	**08:04**	**08:30**	**09:20**	**11:12**	**11:30**						
Leaving the flat: to “from” column, please!	**08:15**		**09:55**									
Coming back to “to” column, please!		**08:20**		**10:45**								
Other person(s) in the flat	**07:45**	**07:46**	**10:50**	**11:10**	**11:40**	**11:41**	**16:45**	**16:46**				
Easy chair usage:	**09:30**	**?**	**11:22**	**?**								
Watching TV	**15:40**	**?**										
Going to bed at night: to “from” column, please!	**19:15**											
Egyéb Events: **G. called, we agreed that sensors can remain further**												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT:

Log book 22nd of April, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:05**											
Grooming, toilet usage	**08:07**	**08:10**	**09:00**	**09:45**								
Leaving the flat: to “from” column, please!	**08:20**		**10:20**		**12:30**							
Coming back to “to” column, please!		**08:23**		**10:22**		**12:35**						
Other person(s) in the flat	**07:45**	**08:00**	**11:40**	**11:42**	**11:50**	**12:10**	**16:40**	**16:42**				
Easy chair usage:	**whole**	**After-noon**										
Watching TV	**19:00**	**?**										
Going to bed at night: to “from” column, please!	**18:30**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME:
COMMENT:

Log book 23rd of April, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**09:00**											
Grooming, toilet usage	**09:05**	**09:07**	**09:15**	**09:40**								
Leaving the flat: to “from” column, please!	**09:45**		**10:15**		**12:15**							
Coming back to “to” column, please!		**09:50**		**10:45**		**12:18**						
Other person(s) in the flat	**08:00**	**08:02**	**11:45**	**11:46**	**12:30**	**12:40**	**16:45**	**16:46**				
Easy chair usage:	**09:55**	**?**										
Watching TV	**15:40**	**?**										
Going to bed at night: to “from” column, please!	**18:30**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT:

Log book 24th of April, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**09:00**											
Grooming, toilet usage	**09:02**	**09:05**	**09:50**	**10:20**								
Leaving the flat: to “from” column, please!	**09:30**		**10:25**		**17:00**							
Coming back to “to” column, please!		**09:35**		**10:45**		**17:30**						
Other person(s) in the flat	**07:45**	**07:46**	**09:05**	**09:30**	**11:45**	**11:46**	**16:50**	**16:51**				
Easy chair usage:	**12:30**	**?**										
Watching TV	**15:40**	**?**	**18:30**	**?**								
Going to bed at night: to “from” column, please!	**18:30**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT:

Log book 25th of April, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**09:00**											
Grooming, toilet usage	**09:02**	**09:05**	**10:00**	**10:30**								
Leaving the flat: to “from” column, please!	**11:10**		**12:10**		**13:45**							
Coming back to “to” column, please!		**11:30**		**12:15**		**14:25**						
Other person(s) in the flat	**07:45**	**07:46**	**11:45**	**11:46**	**16:45**	**16:47**						
Easy chair usage:												
Watching TV	**15:45**	**?**	**18:30**	**?**								
Going to bed at night: to “from” column, please!	**18:30**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT:

Log book 26th of April, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**09:00**											
Grooming, toilet usage	**09:05**	**09:07**	**10:20**	**10:40**								
Leaving the flat: to “from” column, please!	**09:30**		**10:45**		**12:30**		**17:45**		**18:05**			
Coming back to “to” column, please!		**09:45**		**11:15**		**13:00**		**17:50**		**18:10**		
Other person(s) in the flat	**07:45**	**07:46**	**10:00**	**10:15**	**11:30**	**12:30**	**14:00**	**16:00**	**16:45**	**16:46**		
Easy chair usage:	**13:50**	**?**										
Watching TV	**18:30**	**?**										
Going to bed at night: to “from” column, please!	**18:30**											
Other events: **today G. and N. was here, we talked very well about technical things and problems of lonely people.**												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT:

Visit fourteen:

26th of April 2012. afternoon **N**. and **G.** visited aunt **K**.

We checked the operation of sensors – everything worked fine - even sensors can withstand

We discussed the events recorded in the log and their interpretation. We handed over the new log forms ranged from 26th of April to 2nd of May. We talked about the time of dismounting of sensors. Aunt **K**. is not against their staying mounted 1-2 weeks longer.

G. records diary of aunt **K.** dated one week earlier.

Log book 27th of April, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**09:00**		**10:00**									
Grooming, toilet usage	**09:50**	**09:53**	**10:25**	**10:45**								
Leaving the flat: to “from” column, please!	**10:01**		**10:50**		**12:00**		**16:30**					
Coming back to “to” column, please!		**10:05**		**11:15**		**12:05**		**16:40**				
Other person(s) in the flat	**08:00**	**08:01**	**11:30**	**11:32**	**16:00**	**16:02**						
Easy chair usage:	**10:20**	**?**										
Watching TV	**15:35**	**?**	**18:30**	**?**								
Going to bed at night: to “from” column, please!	**18:30**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT:

Log book 28th of April, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:45**											
Grooming, toilet usage	**09:07**	**09:08**	**09:30**	**09:50**	**12:10**	**12:12**						
Leaving the flat: to “from” column, please!	**09:15**		**10:15**		**12:05**		**15:15**		**17:35**			
Coming back to “to” column, please!		**09:18**		**11:00**		**12:08**		**17:00**		**17:50**		
Other person(s) in the flat	**08:00**	**08:01**	**11:30**	**11:31**								
Easy chair usage:	**12:22**	**?**										
Watching TV	**17:00**	**?**										
Going to bed at night: to “from” column, please!	**18:30**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME:
COMMENT:

Log book 29th of April, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**09:00**											
Grooming, toilet usage	**09:05**	**09:06**	**09:30**	**10:05**								
Leaving the flat: to “from” column, please!	**10:15**		**12:05**		**14:45**		**17:30**					
Coming back to “to” column, please!		**11:00**		**12:10**		**16:00**		**17:35**				
Other person(s) in the flat	**08:00**	**08:01**	**11:40**	**11:42**	**16:45**	**16:46**						
Easy chair usage:	**11:20**	**?**										
Watching TV	**16:40**	**?**	**18:30**	**?**								
Going to bed at night: to “from” column, please!	**18:00**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT:

Log book 30th of April, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:45**											
Grooming, toilet usage	**08:50**	**08:52**	**09:30**	**10:00**								
Leaving the flat: to “from” column, please!	**10:30**		**10:36**		**12:15**							
Coming back to “to” column, please!		**10:35**		**11:05**		**12:20**						
Other person(s) in the flat	**08:00**	**08:01**	**08:50**	**08:52**	**11:45**	**11:46**						
Easy chair usage:	**11:22**	**?**										
Watching TV	**18:30**	**?**	**20:25**	**?**								
Going to bed at night: to “from” column, please!	**18:00**											
Other events:												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME:
COMMENT:

Log book 1st of May, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:00**											
Grooming, toilet usage	**08:02**	**08:05**	**09:00**	**09:30**								
Leaving the flat: to “from” column, please!	**08:20**		**10:25**		**10:30**		**12:20**					
Coming back to “to” column, please!		**08:25**		**10:27**		**11:45**		**12:35**				
Other person(s) in the flat	**07:45**	**07:46**	**16:45**	**16:46**								
Easy chair usage:	**12:45**	**?**										
Watching TV												
Going to bed at night: to “from” column, please!	**19:00**											
Egyéb Events: **Today in the bathroom red light flashed twice - so the sensors are still working**												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT:

Log book 2nd of May, 2012.

Aunt K.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**09:00**											
Grooming, toilet usage	**09:02**	**09:05**	**09:30**	**10:30**								
Leaving the flat: to “from” column, please!	**10:40**		**12:10**									
Coming back to “to” column, please!		**11:10**		**12:13**								
Other person(s) in the flat	**07:45**	**07:46**	**11:45**	**11:46**	**13:45**	**15:45**						
Easy chair usage:	**11:15**	**?**	**15:50**	**?**								
Watching TV	**18:30**	**?**										
Going to bed at night: to “from” column, please!	**18:30**											
Egyéb Events: **G. and N. was here today, we talked very well. Next week they probably take things belonging to the university.**												

Today I have had the following pleasant / unpleasant experiences with the system:
I talked about these events in the Home to:
To somebody from the BME: G.
COMMENT:

Visit fifteen:

2nd of May, 2012. afternoon **N**. and **G.** visited aunt **K**.
We checked the operation of sensors – everything worked fine - even sensors can withstand
We discussed the events recorded in the log and their interpretation. We handed over the new log forms ranged from 3rd to 9th of May.
We discussed that sensors would be dismounted in the second half of May.
Aunt **K**. read article of **J**., and she liked it very much.

Visit sixteen:

8th of May, 2012. afternoon **N**., **J**. and **G.** visited aunt **K**.
We discussed the events recorded in the log and their interpretation.
We thanked aunt **K**. for positive cooperation of several months, her continuous advices. We agreed the date of dismounting the sensors: 14th of May.
We stay in touch by phone and personally in time.
We took gifts to her on each visit.

Visit seventeen:

14th of May, 2012. forenoon **N**., **C**. and **G**. visited aunt **K**..
We thanked aunt **K**. for the positive cooperation, her continuous advices and handed over a diploma. Aunt **K**. wrote a letter to **S. D.** about her own idea, requesting financial support to the development of the sensor system. We promised to help delivering the letter to the recipient.
We dismounted the sensors.
We also thanked head nurse **B**. for her continuous cooperation and the fact that the **K**.**D**. Retirement Home undertook the cost of extra energy consumption and correcting the minimal paint defects.
(since 15th of February, 2012. 127 kW has been registered in the apartment. According to the information of Retirement Home, monthly average is about 30 kW, so it is likely that we used 37 kW extra power within 3 months.)
We gave our farewell gifts to her: brandy and flowers.
G. draws up an official letter of thank you for the institute, which will be mailed.

Pilot Test 2 at a private home

Log book 15th of May, 2012.

Aunt É.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!												
Bathroom usage												
Breakfast time												
Lunch time												
Away from home												
Window is open												
Other person(s) in the apartment												
Easy-chair usage												
Watching TV	**20:00**	**22:30**										
Evening reading	**22:50**	**23:30**										
Going to bed at night: to “from” column, please!	**22:50**											

Today I have had the following pleasant / unpleasant experiences with the system:

Today I spoke to: G.

COMMENT: 19:30 – A sensor fell off in the kitchen

Log book 16th of May, 2012.

Aunt É.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**07:30**											
Bathroom usage	**08:00**	**08:10**										
Breakfast time	**08:45**	**09:10**										
Lunch time			**13:45**	**14:15**								
Away from home			**12:00**	**13:30**	**16:00**	**19:00**						
Window is open	**04:40**	**08:00**	**08:30**	**08:40**								
Other person(s) in the apartment	**10:00**	**10:20**										
Easy-chair usage												
Watching TV	**19:30**	**20:30**										
Evening reading	**23:00**	**24:00**										
Going to bed at night: to “from” column, please!	**23:00**											

Today I have had the following pleasant / unpleasant experiences with the system:

COMMENT:

Log book 17th of May, 2012.

Aunt É.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**07:15**											
Bathroom usage	**07:40**	**08:10**										
Breakfast time	**08:40**	**09:00**										
Lunch time			**14:30**	**15:00**								
Away from home					**17:15**	**18:00**						
Window is open	**08:25**	**10:45**										
Other person(s) in the apartment	**12:45**	**14:30**					**18:45**	**22:15**				
Easy-chair usage												
Watching TV	**11:30**	**12:30**										
Evening reading	**22:50**	**23:30**										
Going to bed at night: to “from” column, please!	**22:50**											

Today I have had the following pleasant / unpleasant experiences with the system:

Today I spoke to: G.:

COMMENT: **a sensor fell off at the kitchen window**

Log book 18th of May, 2012.

Aunt É.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**07:00**											
Bathroom usage												
Breakfast time	**08:15**	**08:45**										
Lunch time			**13:30**	**14:00**								
Away from home							**21:15**					
Window is open	**04:45**	**09:15**										
Other person(s) in the apartment	**08:00**	**13:30**			**18:30**	**21:15**						
Easy-chair usage												
Watching TV												
Evening reading												
Going to bed at night: to “from” column, please!												

Today I have had the following pleasant / unpleasant experiences with the system:

Today I spoke to:

COMMENT: there was nobody in the apartment from today 21:15, to 19:00, 20th of May

Log book 20th of May, 2012.

Aunt É.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!												
Bathroom usage												
Breakfast time												
Lunch time												
Away from home							**19:00**					
Window is open												
Other person(s) in the apartment							**19:00**	**19:10**				
Easy-chair usage												
Watching TV	**21:00**	**23:00**										
Evening reading	**23:00**	**23:45**										
Going to bed at night: to “from” column, please!	**23:00**											

Today I have had the following pleasant / unpleasant experiences with the system:

Today I spoke to:

COMMENT:

Log book 21st of May, 2012.

Aunt É.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**07:40**											
Bathroom usage	**08:00**	**08:30**										
Breakfast time	**08:45**	**09:15**										
Lunch time					**13:30**	**14:00**						
Away from home			**12:00**	**13:00**								
Window is open	**08:40**	**12:00**										
Other person(s) in the apartment												
Easy-chair usage												
Watching TV	**19:30**	**22:00**										
Evening reading	**22:30**	**23:30**										
Going to bed at night: to “from” column, please!	**22:30**											

Today I have had the following pleasant / unpleasant experiences with the system:

Today I spoke to:

COMMENT:

Log book 22nd of May, 2012.

Aunt É.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**07:30**											
Bathroom usage	**07:40**	**08:10**										
Breakfast time	**08:45**	**09:15**										
Lunch time			**13:00**	**13:30**								
Away from home												
Window is open	**04:45**	**12:00**										
Other person(s) in the apartment					**14:00**	**16:30**						
Easy-chair usage												
Watching TV												
Evening reading												
Going to bed at night: to “from” column, please!												

Today I have had the following pleasant / unpleasant experiences with the system:

Today I spoke to: G.

COMMENT: **N., Cs., P. and G. were here today.**

Log book 22nd of May, 2012.

Aunt É.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**07:30**											
Bathroom usage	**07:40**	**08:10**										
Breakfast time	**08:45**	**09:15**										
Lunch time			**13:00**	**13:30**								
Away from home												
Window is open	**04:45**	**12:00**	**16:20**	**18:30**								
Other person(s) in the apartment					**14:00**	**16:30**						
Easy-chair usage, Watching TV							**19:25**	**23:15**				
Evening reading									**23:25**	**24:00**		
Going to bed at night: to “from” column, please!											**23:25**	

Today I have had the following pleasant / unpleasant experiences with the system:

Today I spoke to: G.

COMMENT: **N., Cs., P. and G. were here today.**

Log book 23rd of May, 2012.

Aunt É.

Events	from	to	from	To	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**07:45**											
Bathroom usage												
Breakfast time	**08:30**	**09:00**										
Lunch time	**12:45**	**13:15**										
Away from home												
Window is open	**05:15**	**19:30**										
Other person(s) in the apartment			**13:30**	**13:50**	**16:30**	**18:30**						
Easy-chair usage, Watching TV							**19:30**	**22:30**				
Evening reading									**22:45**	**23:30**		
Going to bed at night: to “from” column, please!											**22:45**	

Today I have had the following pleasant / unpleasant experiences with the system:

Today I spoke to:

COMMENT: **the sensor in the bathroom fell off at night**

Log book 24th of May, 2012.

Aunt É.

Events	from	to	from	To	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**08:25**											
Bathroom usage	**08:30**	**09:00**										
Breakfast time	**09:30**	**09:45**										
Lunch time					**14:20**	**14:50**						
Away from home			**10:55**	**12:20**								
Window is open	**05:30**	**10:20**										
Other person(s) in the apartment			**10:45**	**10:55**	**12:20**	**12:40**	**13:00**	**14:00**				
Easy-chair usage, Watching TV									**19:30**	**22:30**		
Evening reading											**23:00**	**23:45**
Going to bed at night: to “from” column, please!											**23:00**	

Today I have had the following pleasant / unpleasant experiences with the system:

Today I spoke to:

COMMENT:

Log book 25th of May, 2012.

Aunt É.

Events	from	to	from	To	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**07:40**											
Bathroom usage	**07:55**	**08:15**										
Breakfast time	**08:30**	**09:00**										
Lunch time					**13:45**	**14:45**						
Away from home			**12:45**	**13:30**							**21:45**	
Window is open	**05:00**	**12:15**										
Other person(s) in the apartment							**18:30**	**21:15**				
Easy-chair usage, Watching TV												
Evening reading												
Going to bed at night: to “from” column, please!												

Today I have had the following pleasant / unpleasant experiences with the system:

Today I spoke to:

COMMENT: **between 21:45, today and 16:00, 28th May there was nobody in the apartment**

Log book 28th of May, 2012.

Aunt É.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!												
Bathroom usage												
Breakfast time												
Lunch time												
Away from home				**16:00**								
Window is open					**16:45**	**17:45**						
Other person(s) in the apartment							**18:45**	**22:50**				
Easy-chair usage, Watching TV												
Evening reading									**23:10**	**00:15**		
Going to bed at night: to “from” column, please!									**23:10**			

Today I have had the following pleasant / unpleasant experiences with the system:

Today I spoke to:

COMMENT:

Log book 29th of May, 2012.

Aunt É.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**07:15**											
Bathroom usage	**07:40**	**08:15**			**10:30**	**10:45**						
Breakfast time	**08:30**	**09:00**										
Lunch time					**13:30**	**14:00**						
Away from home							**17:45**	**19:00**				
Window is open	**07:30**	**17:30**										
Other person(s) in the apartment									**19:00**	**21:15**		
Easy-chair usage, Watching TV									**21:15**	**22:30**		
Evening reading											**23:00**	**23:40**
Going to bed at night: to “from” column, please!											**23:00**	

Today I have had the following pleasant / unpleasant experiences with the system:

Today I spoke to:

COMMENT:

Log book 30th of May, 2012.

Aunt É.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**07:45**											
Bathroom usage	**07:55**	**08:05**										
Breakfast time	**08:45**	**09:15**										
Lunch time			**13:15**	**13:45**								
Away from home					**16:15**	**17:00**						
Window is open	**08:20**	**16:15**										
Other person(s) in the apartment												
Easy-chair usage, Watching TV							**19:30**	**22:45**				
Evening reading									**23:00**	**23:30**		
Going to bed at night: to “from” column, please!									**23:00**			

Today I have had the following pleasant / unpleasant experiences with the system:

Today I spoke to: G.

COMMENT: I found a fallen gadget in the hall

Log book 31st of May, 2012.

Aunt É.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**07:30**											
Bathroom usage	**07:45**	**08:20**										
Breakfast time	**08:50**	**09:30**										
Lunch time			**15:15**	**15:45**								
Away from home												
Window is open	**08:30**	**16:15**										
Other person(s) in the apartment					**13:30**	**15:00**	**16:00**	**17:33**				
Easy-chair usage, Watching TV												
Evening reading												
Going to bed at night: to “from” column, please!												

Today I have had the following pleasant / unpleasant experiences with the system:

Today I spoke to: G.

COMMENT: **G. and N. were here today**

Log book 31st of May, 2012.

Aunt É.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**07:30**											
Bathroom usage	**07:45**	**08:20**										
Breakfast time	**08:50**	**09:30**										
Lunch time			**15:15**	**15:45**								
Away from home												
Window is open	**08:30**	**16:15**							**18:30**	**22:30**		
Other person(s) in the apartment					**13:30**	**15:00**	**16:00**	**17:33**	**18:30**	**22:15**		
Easy-chair usage, Watching TV												
Evening reading											**22:45**	**23:15**
Going to bed at night: to “from” column, please!											**22:45**	

Today I have had the following pleasant / unpleasant experiences with the system:

Today I spoke to: G.

COMMENT: **G., N. and Cs. were here today.**

Log book 1st of June, 2012.

Aunt É.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**07:00**											
Bathroom usage							**18:05**	**18:35**				
Breakfast time	**08:15**	**08:45**										
Lunch time			**13:45**	**14:15**								
Away from home									**21:30**			
Window is open	**07:30**	**19:00**										
Other person(s) in the apartment			**08:00**	**13:40**								
Easy-chair usage, Watching TV												
Evening reading												
Going to bed at night: to “from” column, please!												

Today I have had the following pleasant / unpleasant experiences with the system:

Today I spoke to: G.

COMMENT: **there was nobody in the apartment from 21:30, today to half past six PM, 3rd June**

Log book 3rd of June, 2012.

Aunt É.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!												
Bathroom usage												
Breakfast time												
Lunch time												
Away from home										**18:30**		
Window is open												
Other person(s) in the apartment										**18:30**	**18:35**	
Easy-chair usage, Watching TV												
Evening reading											**22:30**	**23:15**
Going to bed at night: to “from” column, please!											**22:30**	

Today I have had the following pleasant / unpleasant experiences with the system:

Today I spoke to:

COMMENT: the sensor in the WC fell off

Log book 4th of June, 2012.

Aunt É.

Events	from	to	from	to	from	to	from	to	from	to	from	to
Waking up: to “from” column, please!	**07:45**											
Bathroom usage												
Breakfast time	**08:30**	**09:00**										
Lunch time			**13:10**	**13:40**								
Away from home												
Window is open	**02:00**	**08:00**			**17:00**	**17:45**	**18:15**	**19:30**				
Other person(s) in the apartment												
Easy-chair usage, Watching TV							**19:25**	**22:30**				
Evening reading									**22:50**	**23:30**		
Going to bed at night: to “from” column, please!									**22:50**			

Today I have had the following pleasant / unpleasant experiences with the system:

Today I spoke to: G.

COMMENT: **at night the sensor in the bedroom crashed down. I am still alive, but it works this way...**