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Abbreviations

Abbrev.	Description
AAL	Active & Assisted Living
Team	Test participant plus all his counterparts



1 About this Document

This document was made to have a clear process within the field trials for all concerned partners. Furthermore, it shows the overview as well as the details of the trial design including the protocols.

1.1 Relationship to other Kith & Kin deliverables

The deliverable is related to the following Kith & Kin deliverables:

Deliverable:	Relation
D7.2	The protocols are based on the design of the field trials and the evaluation will be made according to them.
D7.1	The evaluation is based on the design of the field trials



2 Goals of the trials

The field trials will give us information about the long-term perception of a user of the kith and kin device.

- Reviewing the **interaction design** of:
 - Making a call
 - Accepting a call
 - Denying a call
 - Receiving a message
 - Sending a message
 - Taking a picture
 - Sending a picture
 - Forward a picture
 - Starting a game
 - Inviting someone for a game
 - Playing a game
 - Changing the modules
- Reviewing of the current **labels and icons of the interaction elements**
- Reviewing the current **visual design and layout** of the interaction elements
- All **functionalities** of the interaction elements



3 Design of the trials

Information according to planned time schedule, preconditions and screener for the participants, the tested prototype and the planned methods can all be found in the document D7.1 Definition of field trials protocol Phase B.

4 Deviations from planned design

In the actual trials there were some deviations from the planned design of them.

- Instead of 10 participants, Switzerland started only with 8 because it was more difficult to find participants, then thought. Between the workshop for potential test persons and handing out the devices was a gap of nearly two months, because the devices had to be fixed before handing them out. Many potential counterparts for the test persons had iPhones that didn't match the technical requirements. For some test persons three or more counterparts were contacted, but only one person fitted in the end.
- Not all events were protocolled because of the effort this meant. But the most important events were noted as foreseen by the project team. An event was any contact that was made with the participants during the trials that were not appointed in advance. Such as problems or questions by the participant or their counterparts.
- Not all participants were ready to fill in a diary. There were people who did it very accurately, others did not want to take this effort at all and wrote a summary in the end. We left this open to everyone as we were happy to have the participants and that we were able to get feedback from them.
- The SUS Score as well as the Net promoter Score would have been interesting to track over a period in order to find out changes of the perception of the users. Because we were asking a lot from our participants already, the test leaders decided to ask this only once in the midterm interview in Switzerland and additionally in the End interview in the Netherlands.
- Instead of an end-interview Switzerland made a focus group together with all the participants and several counterparts because the Midterm Interviews were made too close to the end and we could not expect other results anymore. But with the focus group and the communication with each other, we hoped to find out more.



5 Overview of the trials

Here is an overview of the trials with the most important numbers. Please note: A team is one test participant with its counterparts.

5.1 Netherlands

Find the protocol overviews for the Netherlands right here.

Amount of teams / test participants at the beginning	10
Amount of counterparts at the beginning	20
Drop outs	2
Number of weeks	Average: 13 weeks Longest: 15 weeks Shortest: 11 weeks
Number of events protocolled by project team	11 for 6 participants Minimum 1 event Maximum 5 events
Number of diary days recorded by test participant	25 days by 7 participants Minimum 1 day Maximum 9 days
Net promoter score (average)	7 (6 participants)
System usability scale (average)	71 Usability: 75 Learnability: 56



5.2 Switzerland

Find the protocol overviews for the Netherlands right here.

Amount of teams / test participants at the beginning	8
Amount of men	1
Amount of women	7
Amount of counterparts at the beginning	12
Drop outs	2
Number of weeks	Average: 11 weeks Longest: 14 weeks Shortest: 6 weeks
Number of events protocolled by project team	1 for 1 participant
Number of diary days recorded by test participant	117 days by 5 participants Minimum 5 days Maximum 71 days
Net promoter score (average)	5 (6 participants)
System usability scale (average)	71 Usability: 75 Learnability: 56



6 Results per participant

Following the most important information will be presented per participant.

The results will be shown anonymously. The numeration for the participants works like this: TP (Testparticipant) or CP (Counterpart) + running number + NL (Netherlands) or CH (Switzerland)

6.1 TP-01-NL

TP-01-NL			
Trial lasted from .. to ..	05.12.2018	19.03.2019	
Number of counterparts	2		
Date Midterm interview	28.01.2019		
Date End interview	19.03.2019		
Number of weeks	15		
Number of events	5		
Number of diary notes	2		
Most important quotes	"I could take the device off the stand, but I'm not comfortable doing that."	"The device does not work. I do not need it only to play games."	"I am not notified, when someone tried to call."
Net Promoter Score (Midterm)	8		
Net Promoter Score (End)	7		
SUS Score (Midterm)	Average: 90	Usability: 100	Learnability: 50
SUS Score (End)	Average: 97.5	Usability: 96.9	Learnability: 100
Would pay for the device:	€300 - 600	Only if participant was bound to home	



6.2TP-02-NL

TP-02-NL			
Trial lasted from .. to ..	04.12.2018	05.03.2019	
Number of counterparts	2		
Date Midterm interview	29.01.2019		
Date End interview	05.03.2019		
Number of weeks	13		
Number of events	0		
Number of diary notes	0		
Most important quotes	"Like that there is a sound, when I do something on the device."	"New, nice, funny"	"I like the fact, that I can see my loved ones."
Net Promoter Score (Midterm)	7		
Net Promoter Score (End)	5		
SUS Score (Midterm)	no information	no information	no information
SUS Score (End)	Average: 75	Usability: 78.1	Learnability: 62.5
Would pay for the device:	no information		



6.3TP-03-NL

TP-03-NL			
Trial lasted from .. to ..	04.12.2018	05.03.2019	
Number of counterparts	2		
Date Midterm interview	04.02.2019		
Date End interview	05.03.2019		
Number of weeks	13		
Number of events	1		
Number of diary notes	3		
Most important quotes	"How can I delete/dispose items?"	"A message of missed calls would be good."	
Net Promoter Score (Midterm)	8		
Net Promoter Score (End)	5		
SUS Score (Midterm)	Average: 82.5	Usability: 84.4	Learnability: 75
SUS Score (End)	no information	no information	no information
Would pay for the device:	Would buy it, but does not know for how much		



6.4TP-04-NL

TP-04-NL			
Trial lasted from .. to ..	05.12.2018	05.03.2019	
Number of counterparts	2		
Date Midterm interview	31.01.2019		
Date End interview	05.03.2019		
Number of weeks	13		
Number of events	1		
Number of diary notes	1		
Most important quotes	"I miss features like on a normal tablet"	"I think the device is only for people who are not mobile."	"The letters are large, which is good"
Net Promoter Score (Midterm)	7		
Net Promoter Score (End)	5		
SUS Score (Midterm)	Average: 37.5	Usability: 43.75	Learnability: 12.5
SUS Score (End)	Average: 75	Usability: 81.25	Learnability: 50
Would pay for the device:	no information		



6.5TP-05-NL

TP-05-NL

Trial lasted from .. to ..	10.12.2018	05.03.2019	
Number of counterparts	2		
Date Midterm interview	29.01.2019		
Date End interview	05.03.2019		
Number of weeks	12		
Number of events	1		
Number of diary notes	6		
Most important quotes	"Is it possible to delete pictures?"	"Connecting with each other this way is nice."	"I could not reach the person I called"
Net Promoter Score (Midterm)	7		
Net Promoter Score (End)	8		
SUS Score (Midterm)	Average: 85	Usability: 87.5	Learnability: 75
SUS Score (End)	Average: 82.5	Usability: 84.4	Learnability: 75
Would pay for the device:	€ 300	Has an iPad and would not buy it.	



6.6TP-06-NL

TP-06-NL			
Trial lasted from .. to ..	15.12.2018	28.02.2019	
Number of counterparts	2		
Date Midterm interview	not done		
Date End interview	28.02.2019		
Number of weeks	11		
Number of events	0		
Number of diary notes	0		
Most important quotes	"If I can make, send and receive photos, it is a expansion of my current options."	"I like the big buttons"	"It takes time to learn how to use the device."
Net Promoter Score (Midterm)	no information		
Net Promoter Score (End)	1		
SUS Score (Midterm)	no information	no information	no information
SUS Score (End)	Average: 40	Usability: 43.75	Learnability: 25
Would pay for the device:	would not buy it		



6.7TP-07-NL

TP-07-NL			
Trial lasted from .. to ..	No information	open	
Number of counterparts	2		
Date Midterm interview	not done		
Date End interview	not done		
Number of weeks	was aborted because of health reasons		
Number of events	2		
Number of diary notes	no information		
Most important quotes	no information		
Net Promoter Score (Midterm)	No information		
Net Promoter Score (End)	No information		
SUS Score (Midterm)	no information	no information	no information
SUS Score (End)	no information	no information	no information
Would pay for the device:	No information		



6.8TP-08-NL

TP-08-NL			
Trial lasted from .. to ..	18.12.2018	21.03.2019	
Number of counterparts	2		
Date Midterm interview	07.02.2019		
Date End interview	21.03.2019		
Number of weeks	13		
Number of events	1		
Number of diary notes	4		
Most important quotes	"You can push only one button and you have contact"	"I think it is not for me, but for people who are lonely and are not mobile"	"Seeing each other while talking I like"
Net Promoter Score (Midterm)	8		
Net Promoter Score (End)	8		
SUS Score (Midterm)	Average: 80	Usability: 81.3	Learnability: 75
SUS Score (End)	Average: 47.5	Usability: 46.9	Learnability: 50
Would pay for the device:	Would not buy it, because there are not enough features		



6.9TP-09-NL

TP-09-NL			
Trial lasted from .. to ..	10.12.2018	14.03.2019	
Number of counterparts	2		
Date Midterm interview	07.02.2019		
Date End interview	14.03.2019		
Number of weeks	13		
Number of events	0		
Number of diary notes	9		
Most important quotes	"Good for people, who are lonely or not mobile. It's not for me."	"The phone is handier for calling. I can leave a message and they can call me back."	"I did not have many people to call"
Net Promoter Score (Midterm)	6		
Net Promoter Score (End)	7		
SUS Score (Midterm)	Average: 50	Usability: 50	Learnability: 50
SUS Score (End)	Average: 50	Usability: 59.4	Learnability: 12.5
Would pay for the device:	Would not buy it, because it did not work well enough.		



6.10 TP-10-NL

TP-10-NL			
Trial lasted from .. to ..	06.12.2018	06.12.2019	
Number of counterparts	2		
Date Midterm interview	open		
Date End interview	was aborted because the device did not work		
Number of weeks	0		
Number of events	no information		
Number of diary notes	no information		
Most important quotes	"What do I need to do, if I want to quit this?"	"You can even send a picture!"	
Net Promoter Score (Midterm)	no information		
Net Promoter Score (End)	no information		
SUS Score (Midterm)	no information	no information	no information
SUS Score (End)	no information	no information	no information
Would pay for the device:	no information		



6.11 Overview Netherlands

With the overview comparisons can be made and the changes of perceptions can be seen.

6.11.1 Net Promoter Score

The Net Promoter Score (NPS) is based on the question to the participants: "How likely is it, that you would recommend this device to a friend or colleague?" It was asked once in the Midterm Interview and then again in the End interview.

	Midterm interview	End interview	Change
TP-01-NL	8	7	-1
TP-02-NL	7	5	-2
TP-03-NL	8	5	-3
TP-04-NL	7	5	-2
TP-05-NL	7	8	+1
TP-06-NL	No information	1	-
TP-07-NL	No information	No information	-
TP-08-NL	8	8	+0
TP-09-NL	6	7	+1
TP-10-NL	No information	No information	-
Average	7.3	5.8	-0.86

This gives little indication that satisfaction with the device sank during the trials. Unclear is, if this came from the device, the software or the support. However, we only did ask 7 – 8 people which does not allow quantitative statements.

Furthermore, it can be said, that four participants changed from indifferent (7-8 points) to detractors (0-6 points). None ever was a promoter (9-10 points).

The NPS is an easy to use key figure. Especially, when the users are not accompanied the whole time during the trials. However, it does not say anything about the reasons.



6.11.2 System Usability Scale

The System Usability Scale (SUS) was made to find out, how the usability and learnability is being perceived by the participants. Where it was possible, we asked twice: Once in the midterm interview and once in the end interview to find out if the perception has changed along the way.

		Midterm interview	End interview	Change
TP-01-NL	SUS	90	97.5	↓
	Usability	100	96.9	↓
	Learnability	50	100	↑
TP-02-NL	SUS	No information	75	
	Usability	No information	78.1	
	Learnability	No information	62.5	
TP-03-NL	SUS	82.5	No information	
	Usability	84.4	No information	
	Learnability	75	No information	
TP-04-NL	SUS	37.5	75	↑
	Usability	43.8	81.3	↑
	Learnability	12.5	50	↑
TP-05-NL	SUS	85	82.5	↓
	Usability	87.5	84.4	↓
	Learnability	75	75	
TP-06-NL	SUS	No information	40	
	Usability	No information	43.8	
	Learnability	No information	25	
TP-07-NL	SUS	No information	No information	
	Usability	No information	No information	



		Midterm interview	End interview	Change
	Learnability	No information	No information	
TP-08-NL	SUS	80	47.5	↓
	Usability	81.3	46.9	↓
	Learnability	75	50	↓
TP-09-NL	SUS	50	50	
	Usability	50	59.4	↑
	Learnability	50	12.5	↓
TP-10-NL	SUS	No information	No information	
	Usability	No information	No information	
	Learnability	No information	No information	
Average	SUS	71	67	↓
	Usability	74	70	↓
	Learnability	56	54	↓

Based on research (usability.gov), a SUS score above 68 would be considered above average and anything below 68 is below average.

The changes between the midterm interviews and the end interviews were quite low. TP-08-NL had the biggest change in between. Looking at the diary of this testperson, the ratings were quite good. But there could be found out, that the counterparts had big issues, installing the counterpart apps. This might have led to this result in the SUS.

However, the difference between the midterm and the end interviews are minor and can be neglected in the evaluation.

The usability therefore, is perceived as quite okay by the test participants. However, learnability has potential for improvement.



6.11.3 Usage

For the evaluation there was made a list, whether a certain functionality was used or not by the participants. The users were asked this in the Midterm Interviews.

function	Amount of participants using this function	Amount of participants using this function	Change
	Midterm interviews	End interviews	
Making a call	7	7	
Receiving a call	7	6	↓
Took a picture	7	4	↓
Received a picture	6	4	↓
Watched some pictures	5	2	↓
Played a game alone	3	4	↑
Sent a picture	3	1	↓
Played a game with someone	2	4	↑
Sent a message	2	0	↓
Received a message	1	0	↓
Forwarded a message	1	1	↓
Declined a call	0	0	
Made louder or made quieter	0	0	

This gives us information on what was really tested in the trials. Reasons can be either: It was important for the participant; the function was most prominent on the device or it simply was the easiest to use. Moreover, it depended on the behaviour of the counterparts and how much involved they were in the trials.

This needs to be considered for further development and the evaluation. However, the function of declining a call for example, of course could not be tested often because there were quite few counterparts.



6.11.4 Quotes

The quotes help to understand, what test participants are thinking and what they are saying according to the knk-device. They originate from the hand-out-day, from the midterm interview or the end interview:

First impression

- "New, nice, funny"
- "Connecting with each other this way is nice."
- "If I can make, send and receive photos, it is an expansion of my current options."
- "You can even send a picture!"

Hardware

- "I could take the device off the stand, but I'm not comfortable doing that."
- "The letters are large, which is good"
- "I like the big buttons"

General

- "The device does not work. I do not need it only to play games."
- "Like that there is a sound, when I do something on the device."
- "I miss features like on a normal tablet"
- "The phone is handier for calling. I can leave a message and they can call me back."
- "I did not have many people to call"

Calling

- "I am not notified, when someone tried to call."
- "I like the fact, that I can see my loved ones."
- "A message of missed calls would be good."
- "Seeing each other while talking I like"

Messaging

- "How can I delete/dispose items?"
- "I think it is not for me, but for people who are lonely and are not mobile"
- "Is it possible to delete pictures?"
- "I could not reach the person I called"

Usability/Learnability

- "It takes time to learn how to use the device."
- "You can push only one button and you have contact"
- "What do I need to do, if I want to quit this? [closing the software]"



6.12 TP-01-CH

TP-01-CH			
Trial lasted from .. to ..	26.11.2018	04.03.2019	
Number of counterparts	2		
Date Midterm interview	28.02.2019		
Date End interview	04.03.2019		
Number of weeks	14		
Number of reported events	0		
Number of diary notes	71		
Most important quotes	While looking at a new sent photo messages appear only for a short time	There are missing notifications on new received photos or phone calls	The Plug-Input on the Device could be colored red for better visibility
Net Promoter Score (Midterm)	8		
Net Promoter Score (End)	no information		
SUS Score (Midterm)	Average: 95	Usability: 97	Learnability: 87.5
SUS Score (End)	no information	no information	no information
Would pay for the device:	no information	no information	no information



6.13 TP-02-CH

TP-02-CH			
Trial lasted from .. to ..	10.12.2018	18.02.2019	
Number of counterparts	2		
Date Midterm interview	01.02.2019		
Date End interview	18.02.2019		
Number of weeks	10		
Number of reported events	0		
Number of diary notes	13		
Most important quotes	The functions and the systems were very well	I like playing Sudoku	The communication worked very well
Net Promoter Score (Midterm)	8		
Net Promoter Score (End)	no information		
SUS Score (Midterm)	Average: 97.5	Usability: 100	Learnability: 87.5
SUS Score (End)	no information	no information	no information
Would pay for the device:	no information	no information	no information



6.14 TP-03-CH

TP-03-CH			
Trial lasted from .. to ..	06.12.2018	14.03.2019	
Number of counterparts	2		
Date Midterm interview	28.02.2019		
Date End interview	14.03.2019		
Number of weeks	13		
Number of reported events	1		
Number of diary notes	5		
Most important quotes	It is inconvenient to unmount the device everytime	I like the size, especially while playing Sudoku	I took the mounted device on the lap for a better handling
Net Promoter Score (Midterm)	1		
Net Promoter Score (End)	no information		
SUS Score (Midterm)	Average: 62.5	Usability: 66	Learnability: 50
SUS Score (End)	no information	no information	no information
Would pay for the device:	no information	no information	no information



6.15 TP-04-CH

TP-04-CH			
Trial lasted from .. to ..	21.12.2018	06.03.2019	
Number of counterparts	2		
Date Midterm interview	01.02.2019		
Date End interview	06.03.2019		
Number of weeks	11		
Number of reported events	0		
Number of diary notes	15		
Most important quotes	I haven't worked with a tablet before, but i am confident in using it It looks very simple		
Net Promoter Score (Midterm)	5		
Net Promoter Score (End)	no information		
SUS Score (Midterm)	Average: 47.5	Usability: 44	Learnability: 62.5
SUS Score (End)	no information	no information	no information
Would pay for the device:	no information	no information	no information



6.16 TP-05-CH

TP-05-CH			
Trial lasted from .. to ..	open	open	
Number of counterparts	1		
Date Midterm interview	open		
Date End interview	open		
Number of weeks	open		
Number of reported events	0		
Number of diary notes	0		
Most important quotes	no information	no information	no information
Net Promoter Score (Midterm)	no information		
Net Promoter Score (End)	no information		
SUS Score (Midterm)	no information	no information	no information
SUS Score (End)	no information	no information	no information
Would pay for the device:	no information	no information	no information



6.17 TP-06-CH

TP-06-CH			
Trial lasted from .. to ..	17.12.2018	08.03.2019	
Number of counterparts	2		
Date Midterm interview	04.02.2019		
Date End interview	08.03.2019		
Number of weeks	12		
Number of reported events	0		
Number of diary notes	0		
Most important quotes	I hope, that it is possible for me to talk to friends in brazil	Notifications on missed calls are missing	The functions are understandable
Net Promoter Score (Midterm)	3		
Net Promoter Score (End)	no information		
SUS Score (Midterm)	Average: 100	Usability: 100	Learnability: 100
SUS Score (End)	no information	no information	no information
Would pay for the device:	no information	no information	no information



6.18 TP-07-CH

TP-07-CH			
Trial lasted from .. to ..	open	open	
Number of counterparts	0		
Date Midterm interview	open		
Date End interview	open		
Number of weeks	was aborted		
Number of reported events	0		
Number of diary notes	0		
Most important quotes	no information		
Net Promoter Score (Midterm)	no information		
Net Promoter Score (End)	no information		
SUS Score (Midterm)	no information	no information	no information
SUS Score (End)	no information	no information	no information
Would pay for the device:	no information	no information	no information



6.19 TP-08-CH

TP-08-CH			
Trial lasted from .. to ..	14.01.2019	19.02.2019	
Number of counterparts	1		
Date Midterm interview	30.01.2019		
Date End interview	19.02.2019		
Number of weeks	6		
Number of reported events	0		
Number of diary notes	13		
Most important quotes	The device is too firm, when it is mounted	I am using a tablet for the first time	My children don't have the time for playing games
Net Promoter Score (Midterm)	3		
Net Promoter Score (End)	no information		
SUS Score (Midterm)	Average: 72.5	Usability: 78	Learnability: 50
SUS Score (End)	no information	no information	no information
Would pay for the device:	no information	no information	no information



6.20 Overview Switzerland

With the overview comparisons can be made and the changes of perceptions can be seen.

6.20.1 Net Promoter Score

The Net Promoter Score (NPS) is based on the question to the participants: "How likely is it, that you would recommend this device to a friend or colleague?" It was asked once in the Midterm Interview. In the workshop that was held instead of a final interview the question was not asked.

	Midterm interview
TP-01-CH	8
TP-02-CH	8
TP-03-CH	1
TP-04-CH	5
TP-05-CH	No information
TP-06-CH	3
TP-07-CH	No information
TP-08-CH	3
Average	5

In Switzerland we had 2 indifferents (7-8 points) and even 4 detractors (0-6 points). None ever was a promoter (9-10 points).

The NPS is an easy to use key figure. Especially, when the users are not accompanied the whole time during the trials. However, it does not say anything about the reasons.

Anyway, the satisfaction of the Swiss participants could be better. We even had a 1 score which is the lowest. This came from a participant, who used the device 13 weeks and had quite some difficulties using it according to technical issues and because he had higher expectations. The foreseen counterpart was not able to download the KnK-app and didn't inform the test leader.



6.20.2 System Usability Scale

The System Usability Scale (SUS) was made to find out, how the usability and learnability is being perceived by the participants. In Switzerland this was asked in the midterm interview.

	SUS	Usability	Learnability
TP-01-CH	95	97	87.5
TP-02-CH	97.5	100	87.5
TP-03-CH	62.5	66	50
TP-04-CH	47.5	44	62.5
TP-05-CH	No information	No information	No information
TP-06-CH	100	100	100
TP-07-CH	No information	No information	No information
TP-08-CH	72.5	78	50
Average	79	81	73

Based on research (usability.gov), a SUS score above 68 would be considered above average and anything below 68 is below average.

The usability, therefore, is perceived as very good by the test participants. Also, learnability is okay for them.



6.20.3 Usage

For the evaluation there was made a list, whether a certain functionality was used or not by the participants. The users were asked this in the Midterm Interviews.

function	Amount of participants using this function
	Midterm interviews
Receiving a call	6
Took a picture	6
Watched some pictures	6
Making a call	5
Received a picture	5
Sent a picture	5
Played a game alone	3
Played a game with someone	2
Sent a message	2
Received a message	3
Forwarded a message	0
Declined a call	0
Made louder or made quieter	0

This gives us information on what was really tested in the trials. Reasons can be either: It was important for the participant; the function was most prominent on the device or it simply was the easiest to use. Moreover, it depended on the behaviour of the counterparts and how much involved they were in the trials.

This needs to be considered for further development and the evaluation. However, the function of declining a call for example, of course could not be tested often because there were quite few counterparts.



6.20.4 Quotes

The quotes help to understand, what test participants are thinking and what they are saying according to the knk device. They are from the hand-out-day or from the midterm interview:

First impression

- "The functions and the system are very well"
- "It looks very simple"

Hardware

- "The plug-input on the device could be coloured red for better visibility."
- "It is inconvenient to unmount the device every time"
- "I like the size (of the device), especially while playing Sudoku"
- "I took the mounted device on the lap for a better handling"
- "The device is too firm, when it is mounted"

Playing

- "I like playing Sudoku"
- "My children don't have the time for playing games"

Calling

- "There are missing notifications on new received photos or phone calls"
- "The communication worked very well"
- "I hope, that it is possible for me to talk to friends in brazil"
- "Notifications on missed calls are missing"

Messaging

- "While looking at a new sent photo, messages appear only for a short time"

Usability/Learnability

- "I haven't worked with a tablet before, but i am confident in using it"
- "The functions are understandable"
- "I am using a tablet for the first time. But I could get used to it."



6.20.5 Focus Group

Unlike in the Netherlands, Switzerland made a focus group at the end of the trials in order to discuss the findings all together. Participants were test participants as well as counterparts. Here are the findings:

Positive:

- Easy handling
- Big buttons
- Well hearable communication
- Stable communication, once it is connected
- "Good for beginners"
- Good overview
- Sudoku is sensational and could be a reason to buy the device
- Size of the elements is good

Negative:

- No notification for missed calls
- The stand should be adaptable to one's requirements
- Adapter plug was too short
- Slow charging of the battery
- No notification, when a new picture arrived
- Taking pictures was quite unhandy (without taking off the stand)
- There is no notification, when a message was sent
- Appointments are necessary for some games, so that both are online at the same time
- Games did not work properly at all times

Potential for improvement:

- Emergency call button would be very helpful. The less devices in an apartment, the better and this could easily be connected. The device could consolidate all important functionalities.



7 Conclusion

The counterparts were a very important part of the whole system. They were considered but certainly underestimated according to the trials. There were quite some technical issues for them to install the apps they needed in order to communicate with the trial participants. Therefore, in Switzerland 4 counterparts were supplied with tablets that had the KnK-app programmed. Moreover, it would have been better to have more counterparts per participant to get more meaningful results. It was mentioned, that the counterparts were not available enough.

Counterparts are not always available. This is something, that no device can solve. But the test participants would have liked to play more games – not only alone but also with their loved ones. An interesting approach would be to provide a pool of other gaming partners. Why not connecting with a stranger to have some entertainment? This was neither tested nor asked but would be worth a research, considering the feedbacks of the trial participants according the missing availability of counterparts.

All in all, it can be said, that the interaction with the device worked quite well. Especially the large buttons with the icons were commented positively by several test participants. In a next step it would be interesting to get more information of people, who are less mobile and/or handicapped. This kind of test participant is hard to reach, which was visible in the trials. Therefore, more technical used persons were asked. Especially, because the functionality of the device was not stable enough. Moreover, the communication within trials is easier with people who have a further understanding of technical devices. There was a lot asked from them with diaries and interviews. On the other hand, they wanted to do more with the device, than was offered. This contradicts with the feedback, that the chosen functionalities were appealing and made perfectly sense.

Playing games with the device is a big deal for the test participants. They even think, that this could be the main value and reason to actually buy the product.

Considering the goals of the trials, we can certainly speak of a success. When technical more used people are saying, that they are missing features, it is an indication, that the device was simple enough that they have confidence of doing more with it.

If this limitation of features really is acceptable or even wished, would need further research in connection with a further refinement of the personas. We would recommend to the development team to do further iterations on that.

Coming back to the goals of the trials, the results can be consolidated as follows:

- Reviewing the **interaction design** of:
 - Making a call
 - The participants liked the fact a lot, that they can see their counterparts.
 - This was easily doable without any problems
 - Accepting a call
 - This was easily doable without any problems



- Denying a call
 - This was not tested at all, because there was no such situation during the trials.
- Receiving a message
 - This was made only once in all this time. And this caused problems. It was not clear enough, when a new message arrived.
 - It was mentioned, that the participants wanted to delete some of the messages, which so far, was not possible at all. This was a decision of the consortium team in order to keep it as simple as possible.
- Sending a message
 - Was done rarely.
 - Used the manual to do it.
- Taking a picture
 - This was easily doable.
- Sending a picture
 - Was done more often at the beginning. In the end only once by one participant.
 - This has to do with the perceived immobility of the device., that resulted from the firmly fixed device on the stand. When not many pictures can be made, then they will not be sent. This problem can be solved very easily by fixing the stand a little less firmly.
- Forward a picture
 - Was not done at all.
- Starting a game
 - Could be done easily.
 - They liked the Sudoku a lot.
- Playing a game with someone
 - They liked this feature a lot.



- This depends on the counterparts and they were not always reachable. Therefore, this function was not used very often, even the participants wished to.
- Playing a game alone
 - They liked this feature a lot. Especially Sudoku was popular.
 - This could be a real win for the participants. Especially, when they can choose between different games.
- Changing the modules
 - This did not cause any problems.
- Reviewing of the current **labels and icons of the interaction elements**
 - The participant liked the big icons and buttons a lot.
 - Using them did not cause any problems. Also, orientation seemed to be given.
- Reviewing the current **visual design and layout** of the interaction elements
 - As there was no finding according to this, it was well accepted by the test participants.
- All **functionalities** of the interaction elements
 - The participants were positive about the chosen functionalities and found them well sorted.

No direct focus was the stand of the device. Here some findings according to this:

- The device still is quite big with all the add-ons. The participants would have liked it to be a bit handier.
- The users were uncomfortable, taking the device off the stand, even though, this would have been possible. They did not trust into the stability of it and were concerned, that it would break.