



Neyðarlínan

User Testing Report

Neyðarlínan ohf. in association with Samsýn ehf.
B.Sc Computer Science
T-404-LOKA

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1. Introduction

User testing is a widely used testing technique to gather information on how real users use the application. These users give the team feedback from their experience when testing the application, the feedback helps the team to improve the usability of the application and also to find bugs and errors.

2. Preparation

First the team created tasks for the users, these tasks are realistic circumstances when the user would use the application to contact 112. The team decided to use the think-aloud method for gathering information when the users are performing the tasks.

The team decided to use Google Forms for questionnaires for the users. Google Forms processes the information and gives the team the results for each question. Each user answered questions about the app, the user experience and background information.

Before the test began, the team introduced the user to the project and how the testing will be performed. Here is the introduction given to all users:

“We are four students at Reykjavik University and we are doing our final project in BSc Computer Science. The project is to create and implement a mobile app for 112 Neyðarlínan. The main focus of the app is to simplify the process of contacting 112 emergency services for people with hearing disabilities. The mobile app is built for both iOS and Android operating systems and we will be performing the tests on an iOS device, where you will solve predefined tasks. These tasks are realistic circumstances where you will use the app to get help. After completing all the tasks, you will have to answer a few questions about your background and the app. This test will take up to 10 minutes. The test and all the questions are anonymous and answers can not be traced back to the you. Notice that we are not testing you, we are testing the application. While performing the tasks we ask you to speak aloud about everything that goes through your mind while performing the tasks.”

The team decided to test two group of users with 9 users in the first group and 8 users in the second, the reason for this is to improve the usability of the application and to find bugs. After evaluating the feedback from the first user group and modifying the application,

the second user group will give a feedback that measures if the application has improved after the first user test. First, the team will test users that do not have hearing disabilities. For the first user group, the team gathered users by walking around Reykjavik University and ask random people if they would like to participate in the user testing of the application. After modifying the application from the feedback from the first user group, the second user group is tested. The second user group will only contain people with hearing disabilities. The team was working with the Deaf association and they gathered users for us to test.

User testing tasks

#	Task
1	Create a user
2	There is a burglar in your house at the middle of the night
3	You are driving home and you hit another car
4	You are experiencing breathing difficulties
5	You see an under-age kid with illegal drugs
6	You smell gas in your summerhouse
7	Change the phone number for the user of the app
8	Add to the user of the app that the user is deaf
9	You notice that there is a big water leak at your house
10	You fall and break your leg

3. Implementation

The first user group was tested on the 25th of April 2017 at Reykavik University and the second user group was tested on the 2nd of May 2017 at the Deaf association's headquarters. The user test is performed on one user at a time. Member of the team, Quang starts by reading the introduction to the user. When the user is ready, Quang reads predefined tasks which the user performs. For each task, Steinar takes the time on how long it takes for the user to complete the task and Sigmar notes all the steps that the user will take. The team will then ask the user questions and Sigmar writes down all answers in Google Forms. Finally, the team thanks the user for participating.

4. Tasks user test 1

4.1 Task 1

What: Create a user.

Success criteria: Fill all required fields with valid input and press "Confirm" button

Clicks to complete: 4-8 clicks to complete, depending on how much information the user wants to give.

Conclusion: Some users had problems finding the "Confirm" button and to understand what should be typed in the "Contact" fields. The team decided to add description for the "Contact" section to make it less confusing for the user what should be entered. To make the "Confirm" button more visible, the team decided to make the button visible without the user needing to scroll down.

Average clicks:

Completed task without assistance: 5/9

Average time solving: 72.5 seconds

Median time solving: 53.5 seconds

4.2 Task 2

What: There is a burglar in your house at the middle of the night.

Success criteria: Lögregla → Innbrot → Senda boð

Clicks to complete: 3

Conclusion: Straight forward for almost every user tested. No changes needed.

Average clicks: 3

Completed task without assistance: 9/9

Average time solving: 22.7 seconds

Median time solving: 18 seconds

4.3 Task 3

What: You are driving home and you hit another car.

Success criteria: Police → Car crash → Send emergency message or Accident → Car crash → Send emergency message

Clicks to complete: 3

Conclusion: 89% of the users thought car crash was in the Accident category, the rest picked Police. No user experienced any difficulties solving this task.

Average clicks: 3.125

Completed task without assistance: 9/9

Average time solving: 12.6 seconds

Median time solving: 10 seconds

4.4 Task 4

What: You are experiencing breathing difficulties.

Success criteria: Accident → Breathing difficulties → Send emergency message or Illness → Breathing Difficulties → Send emergency message

Clicks to complete: 3

Conclusion: 78% of the users thought breathing difficulties was in the Illness category, the rest picked Accident. No user experienced any difficulties solving this task.

Average clicks: 3.125

Completed task without assistance: 9/9

Average time solving: 8.7 seconds

Median time solving: 7 seconds

4.5 Task 5

What: You see an under-age kid with illegal drugs.

Success criteria: Child services—> Child risk behaviour —> Send emergency message

Clicks to complete: 3

Conclusion: 78% of the users thought they should contact Child services for this task, others picked Police. Of those users who picked Child services, their next step went different ways, some said “Child risk behaviour”, some “Child neglect” and others picked the “Other” option and typed in “Illegal drugs”. For this task, the team was mainly checking which steps the users would choose for the emergency rather than checking if the user satisfies the success criteria, because there are multiple ways to perform this task.

Average clicks: 4

Completed task without assistance: 9/9

Average time solving: 22 seconds

Median time solving: 18.5 seconds

4.6 Task 6

What: You smell gas in your summerhouse.

Success criteria: Fire—> Toxic chemicals —> Send emergency message

Clicks to complete: 3

Conclusion: All users picked the “Fire” category for this task. Next step went different ways, some users picked “Smell fire”, “Explosion”, “Toxic chemicals” and some used the “Other” option and typed “Smell gas”. For this task, the team was mainly checking which steps the users would choose for the emergency rather than checking if the user satisfies the success criteria, because there are multiple ways to perform this task.

Average clicks: 3.75

Completed task without assistance: 9/9

Average time solving: 20.5 seconds

Median time solving: 8 seconds

4.7 Task 7

What: Change the phone number for the user of the app.

Success criteria: Press the Personal information tab, then press the phone number field, change phone number, scroll down and press “Confirm” button

Clicks to complete: 3

Conclusion:

All but two users finished the task, these two users did not scroll down to press the “Confirm” button. Similar to task 1, not all users found the “Confirm” button and the team decided to make the button more visible after the feedback the team got from the user testing.

Average clicks: 3

Completed task without assistance: 6/9

Average time solving: 18.4 seconds

Median time solving: 18 seconds

4.8 Task 8

What: Add to the user of the app that the user has hearing disabilities.

Success criteria: Press the Personal information tab, then press the “Deaf?” checkbox (change to true), scroll down and press “Confirm” button.

Clicks to complete: 3

Conclusion:

All users finished the task with ease, this task was right after task 7 which is similar to task 8.

Completed task without assistance: 9/9

Average clicks: 3

Average time solving: 7.7 seconds

Median time solving: 6 seconds

4.9 Task 9

What: You notice that there is a big water leak at your house.

Success criteria: Fire → Water leak → Send emergency message

Clicks to complete: 3

Conclusion:

6 of 9 users used the “Other” option for this task. Users were not realizing that “Water leak” is a part of the Fire category. The team expressed their concern to 112 that users weren’t acknowledging that water leak was in the fire category but 112 responded that water leak is part of the fire department’s work so water leak will remain in the fire category.

Average clicks: 4

Completed task without assistance: 9/9

Average time solving: 20.3 seconds

Median time solving: 20 seconds

4.10 Task 10

What: You fall and break your leg.

Success criteria: Accident → Stumbles → Send emergency message or Accident →

High Fall → Send emergency message

Clicks to complete: 3

Conclusion:

All users completed this task easily. No modifications needed.

Average clicks: 3

Completed task without assistance: 9/9

Average time solving: 10.4 seconds

Median time solving: 8 seconds

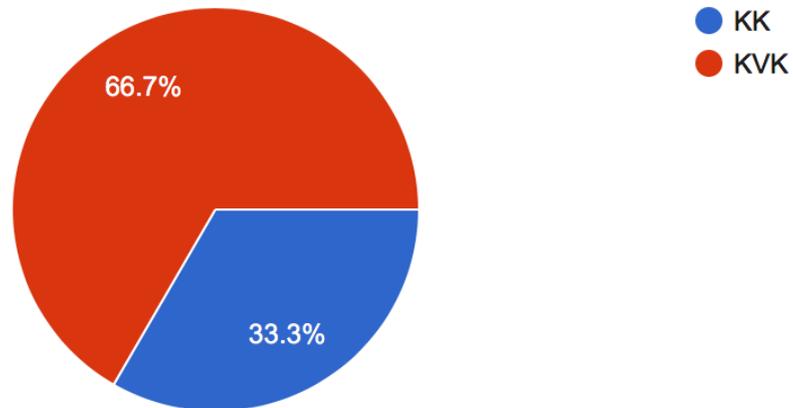
5. Questions user test 1

All users were Icelandic so the user testing questions and answers are all on Icelandic. Table below shows the questions on English.

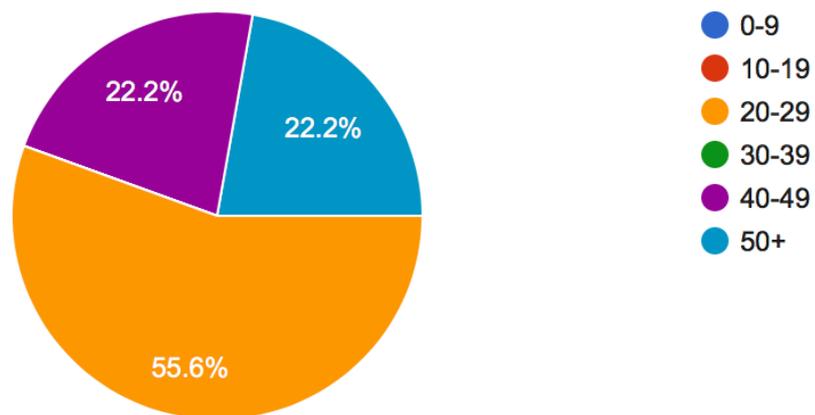
#	Questions
1	Gender?
2	Age?
3	Working or in school?
4	Education?
5	Have you contacted 112 before?
6	Do you think the app has everything you need to send an emergency message to 112?
6.1	If no, would you add to the emergency message?
7	Did you notice that the app had your exact location?
7.1	If no, how could the app display your location better?
8	Did you notice that the app showed the emergency type you picked?
8.1	If no, how could the app display the emergency type you picked better?
9	What were the main advantages of the app?
10	What could go better? Any cons?

5.1 Background questions

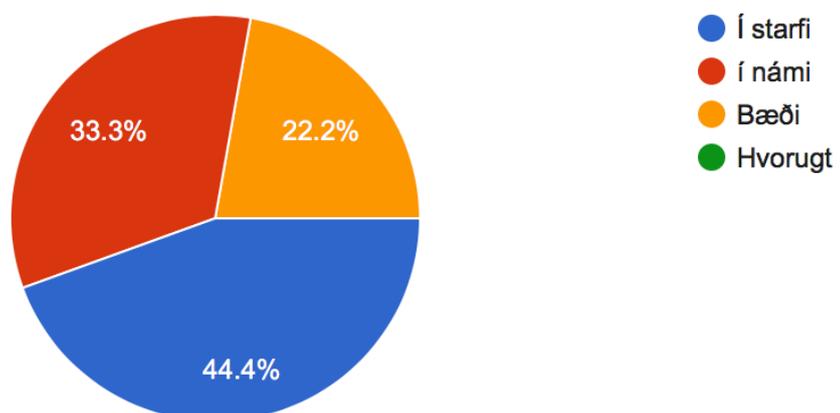
Kyn (9 responses)



Aldur (9 responses)



Starf / Nám? (9 responses)

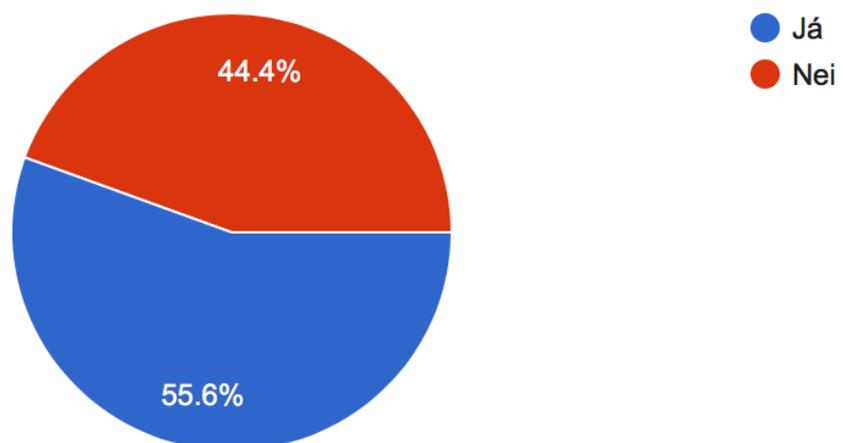


Menntun? (9 responses)

Stúdentspróf
Stúdentspróf, í HÍ að læra ferðamálafræði
Líffræði
Tölvunarfræði
MBA
Master í verkfræði
Viðskiptafræði
BA Lögfræði
Verkfræði

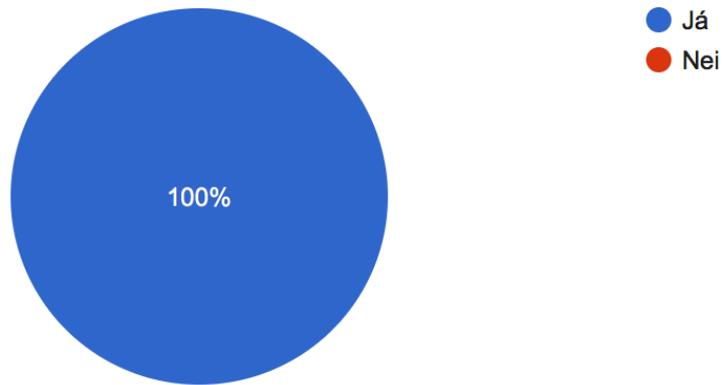
5.2 General questions

Hefuru haft samband við Neyðarlínuna áður? (9 responses)

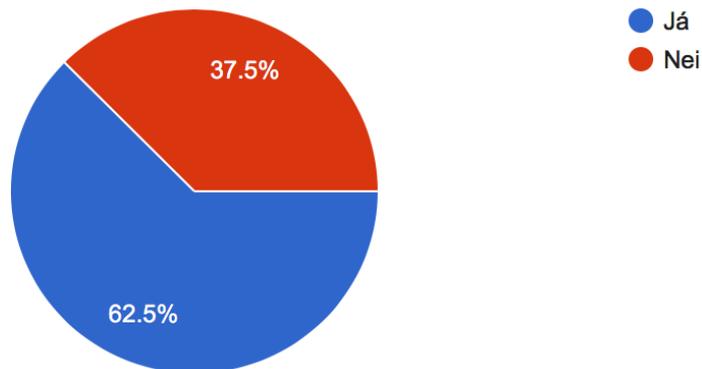


Fannst þér appið hafa allt til þess að senda neyðarboð á neyðarlínuna?

(9 responses)



Tókstu eftir að þú varst með rétta staðsetningu í neyðarboðinu? (8 responses)



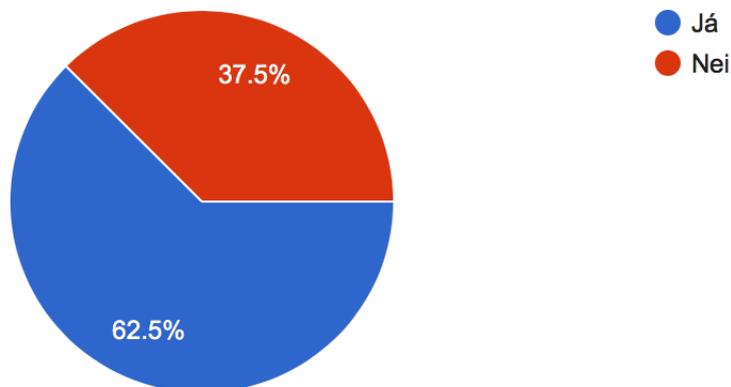
Ef ekki hvernig ætti staðsetningin að koma betur fram? (3 responses)

Heimilisfangið ætti að standa

Fá eitthvað aðeins meira conformation, "við vitum hvar þu ert", meira áberandi punktur

Nei var ekki að hugsa um það

Fannst þér ljóst hver fyrri skref þín voru í neyðarboðinu? (8 responses)



Ef nei, hvernig finnst þér skrefin ættu að koma fram? (3 responses)

Hefði mátt koma aðeins skýrara, stærra kannski?

Var ekki að veita því athygli

Maður er að drífa sig að senda boð og tekur ekki alveg eftir þessu

Hverjir finnst þér helstu kostir appsins? (9 responses)

Fljótleg og auðveld leið til þess að hafa samband við neyðarlínuna og mjög gott fyrir heyrnaskerta

Tekur stuttan tíma

Þægilegt, kannski stressuð að hringja. Myndi frekar nota appið en að hringja

Fínt einfalt og stórir hnappar, og ef maður finnur ekki eitthvað þá fer maður í annað. Fljótt

Mjög aðgengilegt, einfalt, fljótvirkt, ekki mörg skref til að senda neyðarboð

Gríðarlega einfalt, fljótvirkt

Mjög skýrt, ótrúlega auðvelt, öll táknið gera þetta skýrt, þarf ekki að leita mikið

Þægilegt að hafa samband án þess að tala, fljótlegt

Hratt, hraðar en að hringja, þægilegt að hafa myndir

Hvað mætti betur fara? (9 responses)

Nei
Nei
Of auðvelt, fólk gæti misnotað appið og leikið sér að senda neyðarboð
Gæti verið sniðugt að vera með blóðflokk í persónuuppl
Meira conformation, skýrar hvar viðkomandi er staðsettur, og hvað gerist ef að maður lokar chattinu
Tabarnir ættu að vera aðeins meira áberandi, ekki sama lit og bakgrunnurinn
Staðfesta takkinn í persónuupplýsingar, fattar ekki að skrolla niður
Nei ekkert
Alltof margir valmöguleikar, erfitt að átta sig á því hvað maður á að ýta á

6. App for user test 1

6.1 Before user test 1

Following images show how the application looked like when the first user testing was performed.

1. Register page

The screenshot shows the registration page with a red header titled "Persónuupplýsingar". The status bar at the top shows "Vodafone IS", "10:39", and "30%" battery. The form fields are:

- Nafn: Jón Jónssonooo
- Kennitala: 020294-4189
- Heimilisfang 1: Storagerði 17
- Heimilisfang 2: Steinahlið 1G
- Sími: 888-8888
- Heyrnarskert/ur:
- Tengiliður: (empty)

The bottom navigation bar has "Heim" and "Persónuupplýsingar" (highlighted).

The screenshot shows the registration page with a red header titled "Persónuupplýsingar". The status bar at the top shows "Vodafone IS", "10:39", and "31%" battery. The form fields are:

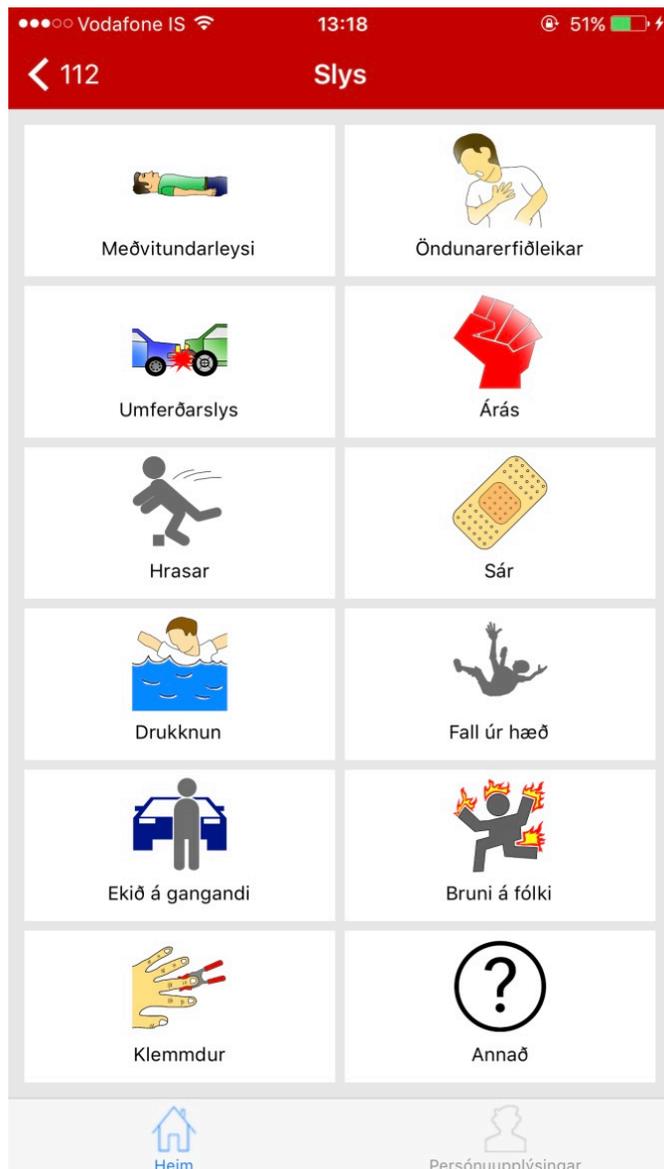
- Heimilisfang 1: Storagerði 17
- Heimilisfang 2: Steinahlið 1G
- Sími: 888-8888
- Heyrnarskert/ur:
- Tengiliður: (empty)
- Nafn: Jón Jónsson
- Sími: 777-7777

A red button labeled "Staðfesta" is visible at the bottom of the form. The bottom navigation bar has "Heim" and "Persónuupplýsingar" (highlighted).

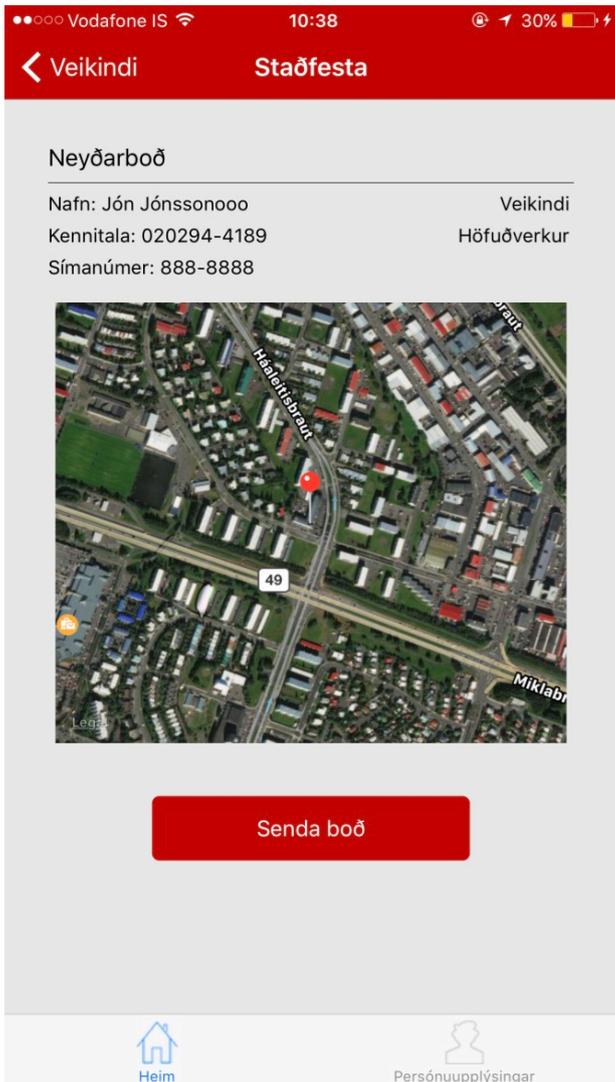
2. Emergency page



3. Emergency detail page



4. Confirmation page



5. Chat page

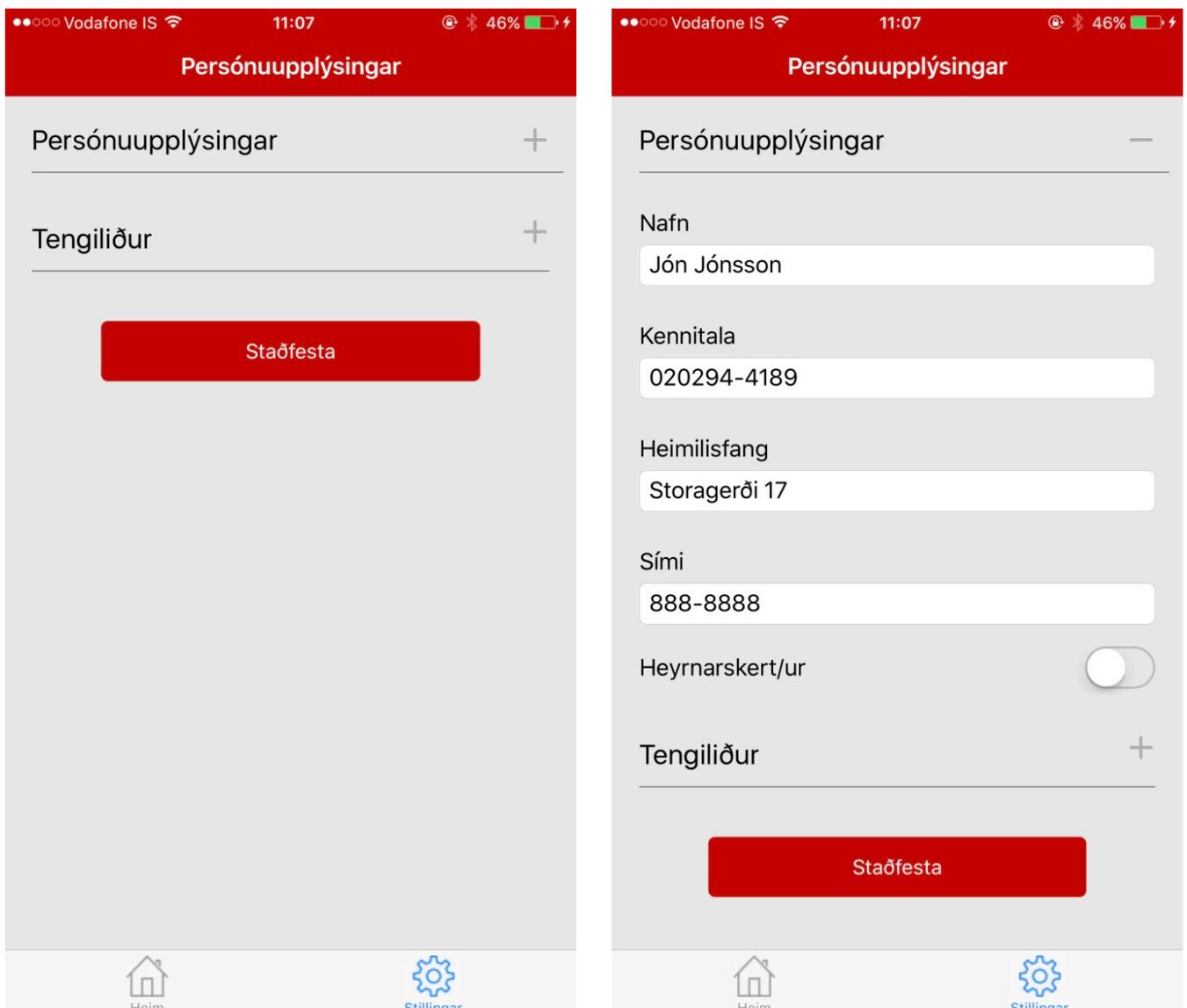


6.1 After user test 1

Following images show how the application looked like after the team got feedback from the first user test and modified the application. This version of the application was also used for the second user testing.

1. Register page

There were some changes required in this page. Users had some problems finding the “Confirm” button and unsure what should be typed in the “Contact” field. The team removed “Home address 2” field, added description for “Contact” section and made the “Confirm” button more visible.



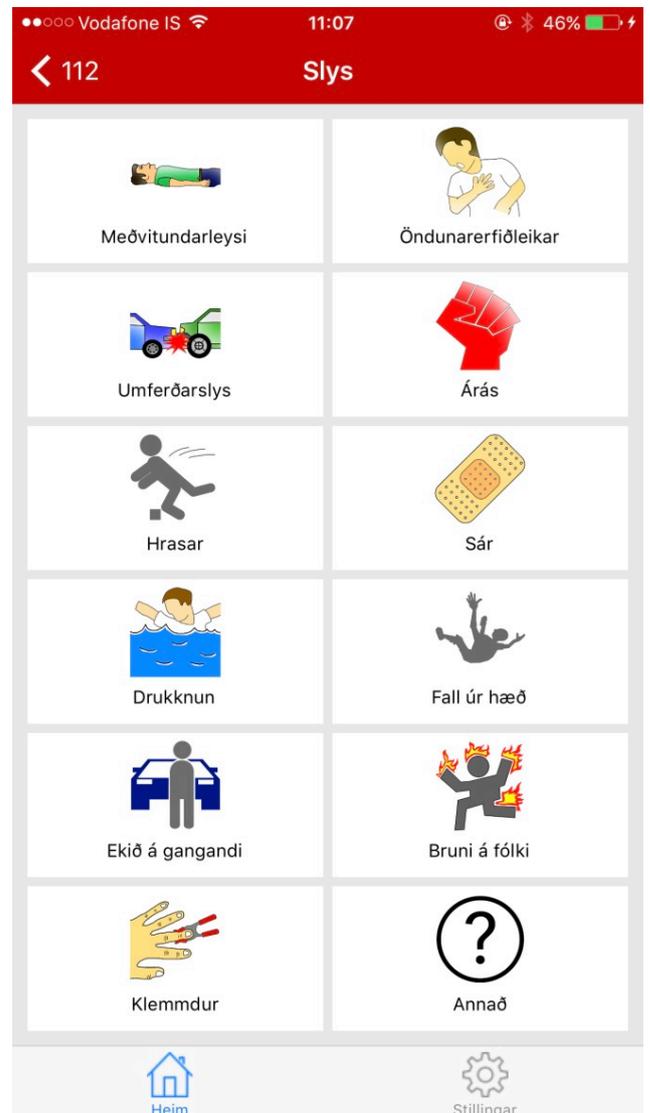
2. Emergency page

No changes.



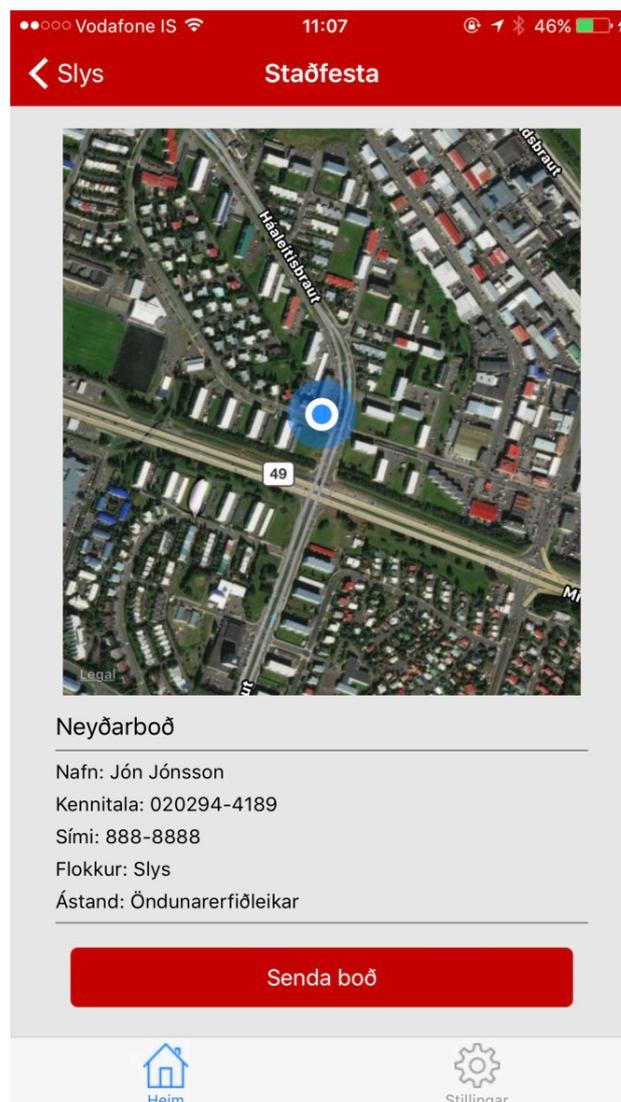
3. Emergency detail page

No changes.



4. Confirmation page

There were some changes required in this page. Some users weren't noticing the "pin" on the map at their location and some users did not notice that the map had their exact location. The team decided to remove the pin and replace it with a "dot" with waves to make it more visible that the map is at the right location. The map was also moved and made bigger. The emergency message information is now below the map and all in one column not two.



5. Chat page

No changes needed. Notice that the Tab bar icons have been changed and made more visible to the user. That change is on all pages.



05/02/2017 10:42 AM



7. Tasks user test 2

7.1 Task 1

What: Create a user.

Success criteria: Fill all required fields with valid input and press "Confirm" button

Clicks to complete: 4-8 clicks to complete, depending on how much information the user wants to give.

Conclusion: The team couldn't draw any conclusions for this task after the user testing. The reason for that is that all the users were deaf and their ability to read and write is poor. A member of the team had to walk all the users through the register page.

Completed task without assistance: 2/8

Average time solving: 85.75 seconds

Median time solving: 81.5 seconds

7.2 Task 2

What: There is a burglar in your house at the middle of the night.

Success criteria: Lögregla → Innbrot → Senda boð

Clicks to complete: 3

Conclusion: All users finished task with ease. No changes needed

Average clicks: 3

Completed task without assistance: 7/8

Average time solving: 20.5 seconds

Median time solving: 16.5 seconds

7.3 Task 3

What: You are driving home and you hit another car.

Success criteria: Police → Car crash → Send emergency message or Accident → Car crash → Send emergency message

Clicks to complete: 3

Conclusion: 7/8 users followed the success criteria. One user said Accident → Man run over → Send emergency message, which can be the right option in some incidents.

Average clicks: 3

Completed task without assistance: 8/8

Average time solving: 14.6 seconds

Median time solving: 13.5 seconds

7.4 Task 4

What: You are experiencing breathing difficulties.

Success criteria: Accident → Breathing difficulties → Send emergency message or Illness → Breathing Difficulties → Send emergency message

Clicks to complete: 3

Conclusion: 7/8 users followed the success criteria. One user said Illness → Limb power reduction → Send emergency message.

Average clicks: 3

Completed task without assistance: 8/8

Average time solving: 15.5 seconds

Median time solving: 10.5 seconds

7.5 Task 5

What: You see an under-age kid with illegal drugs.

Success criteria: Child services—> Child risk behaviour —> Send emergency message

Clicks to complete: 3

Conclusion: 5/8 users thought this is a police matter and selected Police —> Illegal drugs which maybe should be a part of the success criteria. Other users selected Child services and then selected either the “Other” option or Child custody. For this task, the team was mainly checking which steps the users would choose for the emergency rather than checking if the user satisfies the success criteria, because there are multiple ways to perform this task.

Average clicks: 3.125

Completed task without assistance: 8/8

Average time solving: 16.1 seconds

Median time solving: 11.5 seconds

7.6 Task 6

What: You smell gas in your summerhouse.

Success criteria: Fire—> Toxic chemicals —> Send emergency message

Clicks to complete: 3

Conclusion: 6/8 users select the Fire category but next step was either See fire, Smell gas or toxic chemicals. Two users used the “Other” option and typed in “smell gas”. Only one user followed the success criteria. For this task, the team was mainly checking which steps the users would choose for the emergency rather than checking if the user satisfies the success criteria, because there are multiple ways to perform this task.

Average clicks: 4

Completed task without assistance:

Average time solving: 25.8 seconds

Median time solving: 17.5 seconds

7.7 Task 7

What: Change the phone number for the user of the app.

Success criteria: Press the Personal information tab, then press the phone number field, change phone number, scroll down and press “Confirm” button

Conclusion: Same as task 1. The team couldn't draw any conclusions for this task after the user testing. The reason for that is the all the users were deaf and their ability to read and write is poor. A member of the team had to walk all the users through the register page.

Completed task without assistance: 1/8

Average time solving: 39.6 seconds

Median time solving: 34 seconds

7.7 Task 8

What: Add to the user of the app that the user has hearing disabilities.

Success criteria: Press the Personal information tab, then press the “Deaf?” checkbox (change to true), scroll down and press “Confirm” button.

Conclusion: The team couldn't draw any conclusions for this task after the user testing. The reason for that is the all the users were deaf and their ability to read and write is poor. A member of the team had to walk all the users through the register page.

Completed task without assistance: 1/8

Average time solving: 34.5 seconds

Median time solving: 34 seconds

7.9 Task 9

What: You notice that there is a big water leak at your house.

Success criteria: Fire → Water leak → Send emergency message

Clicks to complete: 3

Conclusion:

4/8 users selected the Police category and then either used “Other” option or Vandalism. 2 users followed the success criteria. The one user used the “Other” option and typed in “water leak”.

Average clicks: 4

Completed task without assistance: 7/8

Average time solving: 32.5 seconds

Median time solving: 34 seconds

7.10 Task 10

What: You fall and break your leg.

Success criteria: Accident → Stumbles → Send emergency message or Accident →

High Fall → Send emergency message

Clicks to complete: 3

Conclusion: 5/8 users followed the success criteria. 2 users used the “Other” option and one user said Illness → Limb power reduction.

Average clicks: 3,125

Completed task without assistance: 8/8

Average time solving: 16.25 seconds

Median time solving: 14.5 seconds

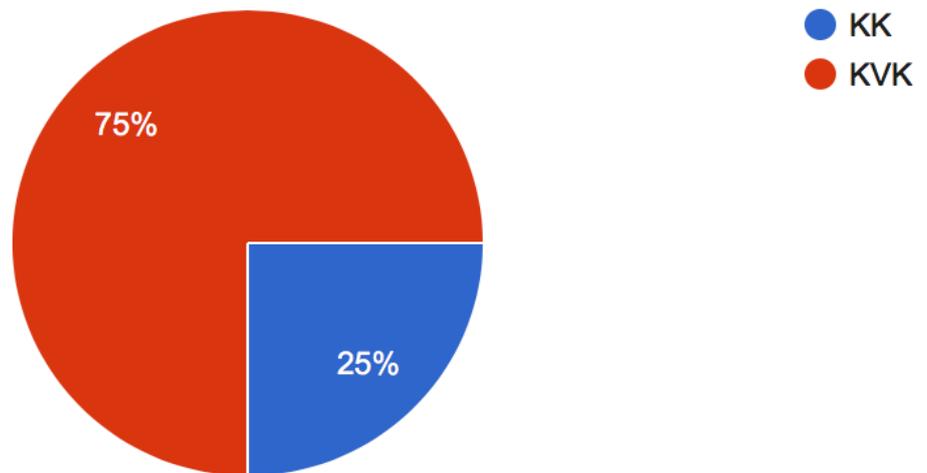
8. Questions user test 2

All users were Icelandic so the user testing questions and answers are all on Icelandic. Table below shows the questions on English.

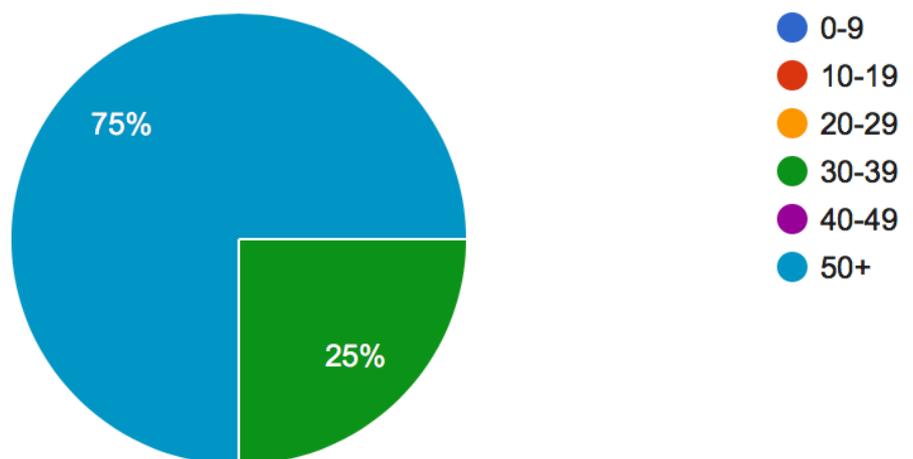
8.1 Background questions

#	Questions
1	Gender?
2	Age?
3	Working or in school?
4	Education?
5	Have you contacted 112 before?
6	Do you think the app has everything you need to send an emergency message to 112?
6.1	If no, would you add to the emergency message?
7	Did you notice that the app had your exact location?
7.1	If no, how could the app display your location better?
8	Did you notice that the app showed the emergency type you picked?
8.1	If no, how could the app display the emergency type you picked better?
9	What were the main advantages of the app?
10	What could go better? Any cons?

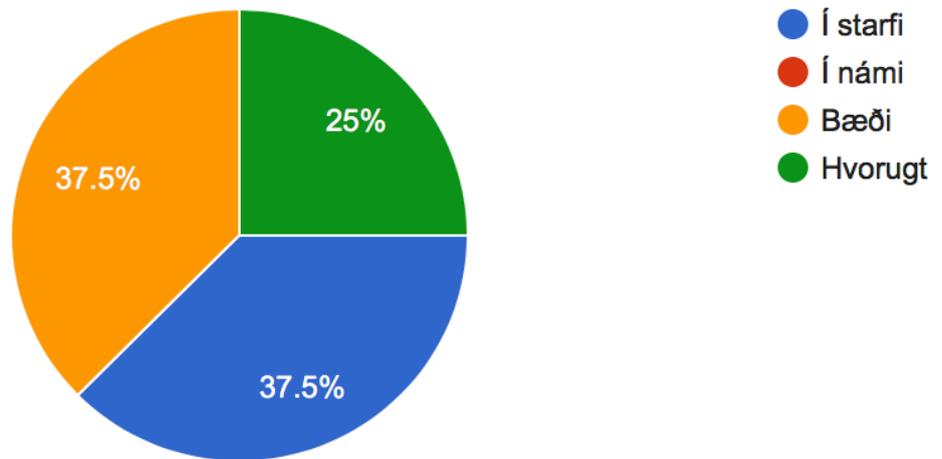
Kyn (8 responses)



Aldur (8 responses)



Starf / Nám? (8 responses)

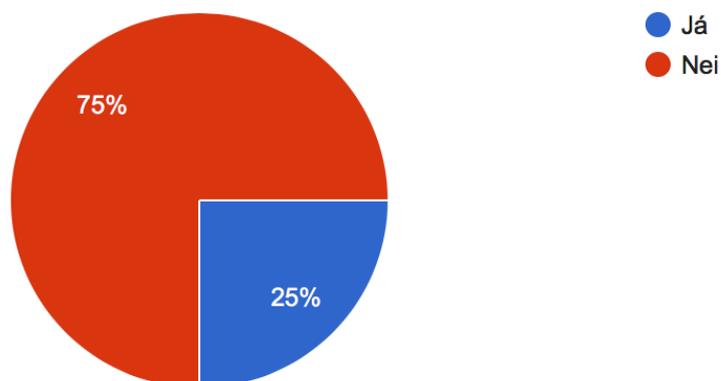


Menntun? (8 responses)

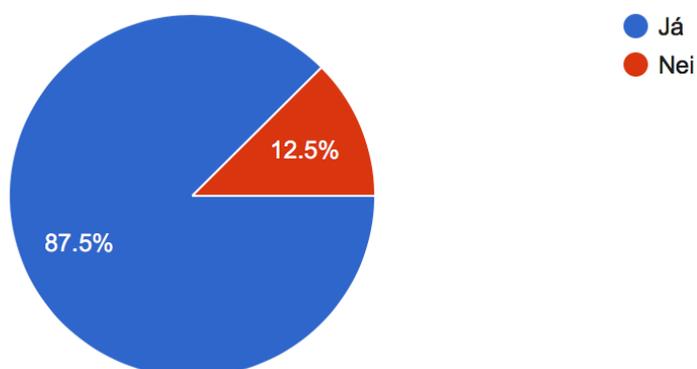
Kennararéttindi
Kennararéttindi
Diplóma
Hjúkrunarfræðingur
Kvikmyndagerð
Engin
Sjómaður
Stuðningsfulltrúi

8.2 General questions

Hefuru haft samband við Neyðarlínuna áður? (8 responses)



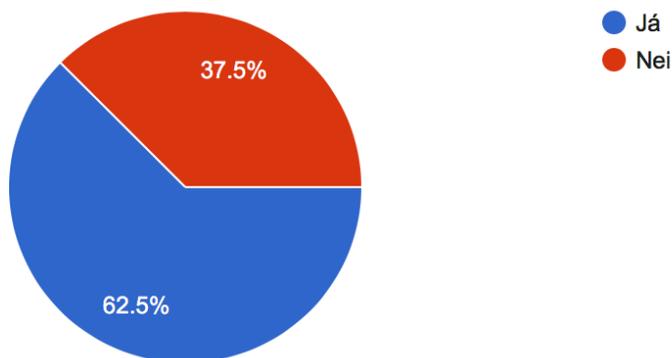
Fannst þér appið hafa allt til þess að senda neyðarboð á Neyðarlínuna?
(8 responses)



Ef ekki, hvernig ætti neyðarboðið að koma betur fram? (1 response)

Vatnsleki var oskyrt, fattaði ekki strax að Eldur væri slökkvilið

Tókstu eftir að þú varst með rétta staðsetningu í neyðarboðinu? (8 responses)



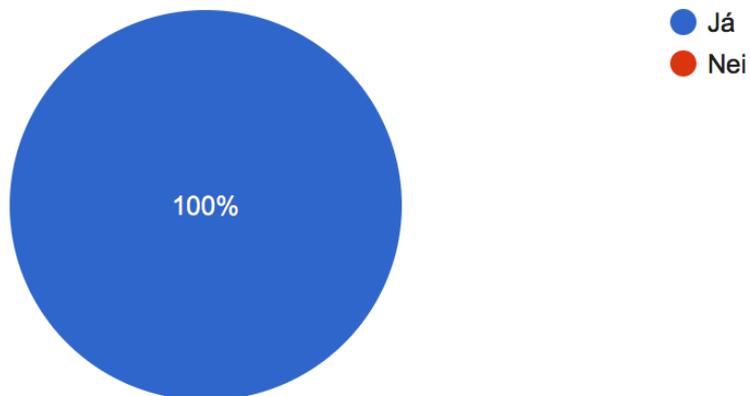
Ef ekki, hvernig ætti staðsetningin að koma betur fram? (3 responses)

Tók ekki eftir því, var bara að flýta mér að senda boðið.

Ég veit ekki

tók ekki eftir því en ég vona að það sé rétt staðsetning

Fannst þér ljóst hver fyrri skref þín voru í neyðarboðinu? (8 responses)



Hverjir finnst þér helstu kostir appsins? (8 responses)

Myndrænt
Víðtækt, fljót að senda boð, fólk sem er í panic þá er gott að þurfa ekki að skrifa, gott að vita að það maður sé fljótur að senda boðið.
Mjög aðgengilegt, myndrænt, minnkar stress í svona tilvikum, fljótlegt.
Ágætt, er að sjá þetta í fyrsta sinn, þarf að læra á þetta betur.
Fljótt og aðgengilegt, myndrænt, lítið af texta er gott, mjög hratt, sparar tíma sem gefur okkur traust, þetta er ekki bara fyrir heyrnarlausu heldur alla
Sundurliðunin er aðgengileg, mjög góðar upplýsingar í því. Myndrænt. Aðgengilegt
Aðgengilegt, mjög skýrt
Margir valmöguleikar

Hvað mætti betur fara? (8 responses)

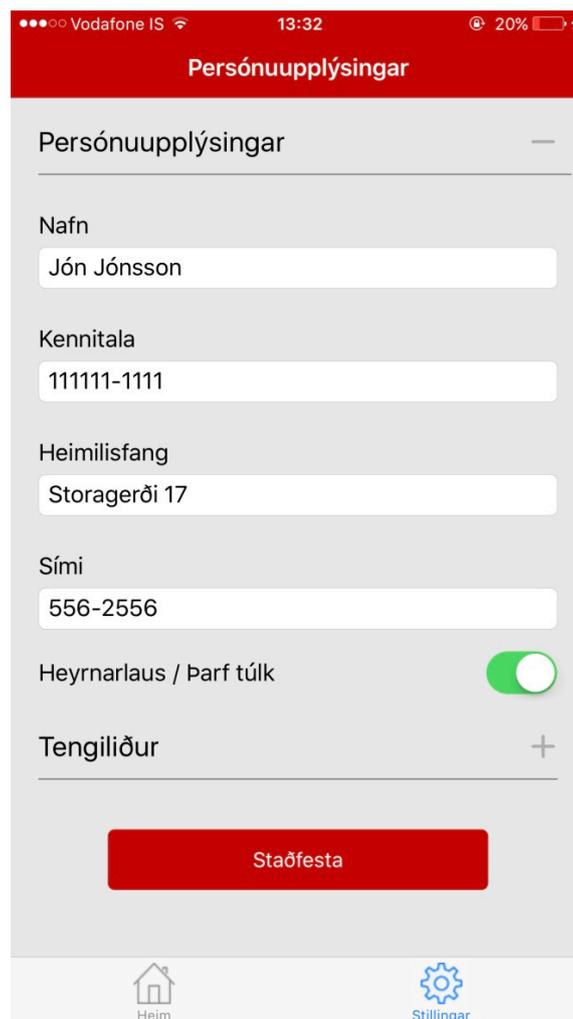
Nei
Nei
Væri hægt að hafa fleiri valmöguleika
Eldur mætti skoða það aðeins betur að vera meira slökkvilið, vera með mynd af sjúkrabíl og slökkvilið, laga að ef fólk er heyrnarlaust þá mætti taka fram að það þyrfti túlk
Vissi ekki hvar ég átti að leita að gasinu, var ekki viss hvort það væri lögregla eða slys eða eldur
Nei engar athugasemdir
Að það standi heyrnarlaus og að lögreglan viti að það þyrfti túlk
Var ekki viss hvort ég var að setja inn réttar upplýsingar um neyðarboðið,

9. App after user test 2

Chapter 6 showed how the app looked like before user test 1, after user test 1 and before user test 2. Here below the images shows how the app looks like after the team modified the app after the feedback from second user test.

1. Register page

Some users as well as employees from the Deaf association suggested that the team should change the text for the “Deaf” switch. The text was “Hearing impaired” but after the feedback from the user test the team decided to change the text to “Deaf / Needs interpreter” because there is a difference between begin deaf and being hearing impaired, people who are deaf need an interpreter but hearing impaired don’t always need an interpreter to communicate.



Vodafone IS 13:32 20%

Persónuupplýsingar

Persónuupplýsingar

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Heyrnarlaus / Þarf túlk

Tengiliður +

Staðfesta

Heim Stillingar

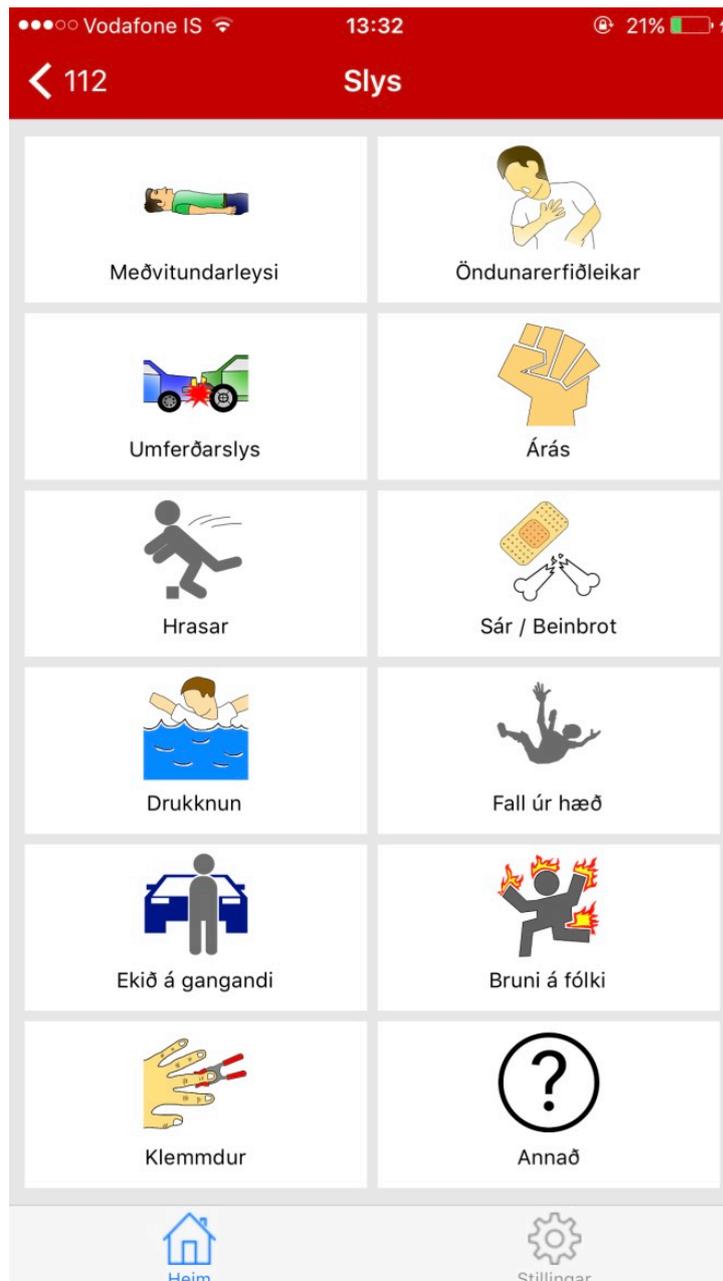
2. Emergency page

The team decided to change the icon for Accident and Fire category. Users had some problems realizing that the Fire category is for the fire department and not all emergencies that are in the Fire category are based on a fire like water leak. The team thought a fire truck would be more suitable icon for this category. The Accident icon was also changed. The previous icon was the icon which appears on every ambulance and is a icon from the Red Cross Iceland. The team thought an icon with only the red cross would be more suitable with no text. The text from the previous icon was very small and no user really read the text.



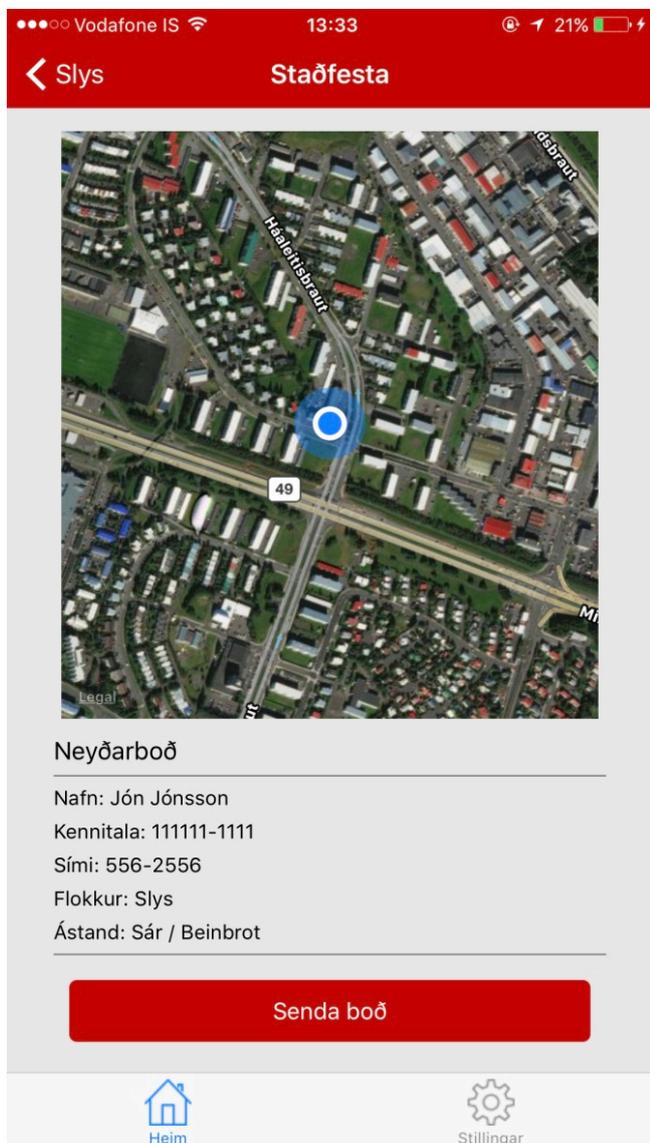
3. Emergency detail page

Accident detail page got a new icon. The “wound” icon and text was changed to “Wound / Broken bone” and the icon got a broken bone as well. The feedback from task 10 in the user testing showed the team that users wanted a category for “Broken bone”. The team expressed their concerns to 112 and they agreed that broken bone should be in the Accident category and should be in the same category as “Wound”.



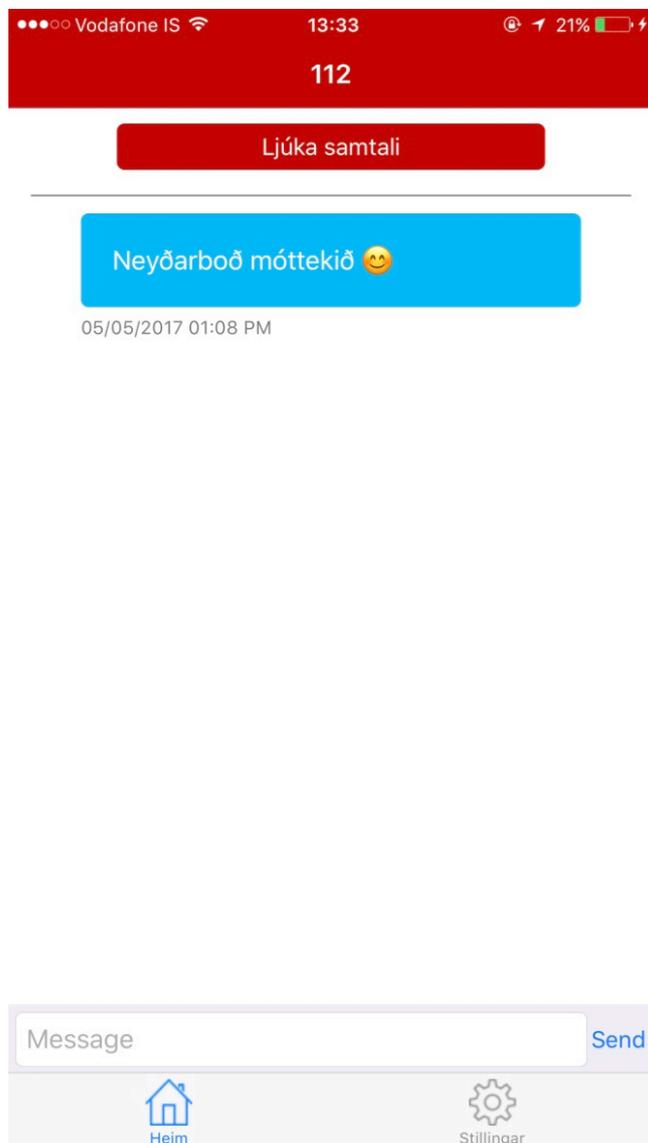
4. Confirmation page

No changes.



5. Chat page

Added "End conversation" button which wasn't a part of the changes from the user testing feedback.



10. Summary

As said before, user testing is a good technique to gather information on how real users use the application and to find possible errors or bugs. With these two user testings, the team gathered large amount of information how possible users use the application. The two user groups gave the team a lot of useful feedback for the team to improve the application and the user experience.

The majority of the users were pleased with the app and the possibilities that the app provides in terms of sending an emergency message. Most users thought the app was accessible, fast to send emergency message, simple to use and responsive. The users were pleased with the graphical user interface especially the users with poor reading ability. Some users said that they would rather use this application to contact 112 then making a phonecall to 112.

There were some minor cons in the user interface and the user testing gave the team good feedback on what to improve. The changes the team made in the user interface from the feedback from the users was redesigning the icon for the “Fire” category, make the submit button in the register page more visible, remove the “pin” on the map and replace it with a more visible cursor, add “broken bone” category to “Accident” and change the switch button label in the register page from “Hearing impaired” to “Deaf / Needs interpreter”. The register page was something the team had to improve after users had problems with finding the submit button or not realizing that to they had to scroll down to make the button visible. After modifying the app from the feedback from the users the team finds the app more user friendly, simpler and more responsive.

Of the two user group the team used for testing, the second group of users which were all deaf, had a harder time finishing the tasks then the first group of users. The team believes that the reason for that is the people of the second user group were on average older than the first group and their ability to read and write is worse. The second user group on average took longer time completing all the tasks but average clicks were similar.

For the team, user testing was a great experience and performing user testing was necessary for the development of the app and for the team to see how possible users use the app. The app has to be simple, fast and responsive in order to serve its purpose, that is to send a quick emergency message and the user testing gave the team information if any changes were needed in order to improve the app. Nothing is perfect and the team learned a lot as developers performing these tests but there were some things that the team would change if the user tests were to be performed again, such as having the user groups more mixed for example having deaf people in both groups. In the end the team would recommend to all developers who are building an application to perform user testing.