

Instruments Used

For this study, it was required that participants sign a consent form, a copy can be found in the **Appendix “3.4 Consent Form”**. Four tasks were designed for the test, going from easy to more complex execution, testing different functions available on the app. The tasks are described in the **Appendix “3.5 Task instructions and success criteria”**.

Participants interacted with a paper prototype printed for this test, showing them the different screens and transitions that the app will display.

After executing the tasks, the participants evaluated the app using the SUS test, the questionnaire can be found in the **Appendix “3.7 Post-Questionnaire: System Usability Scale – SUS”**.

Severity of the findings

Severity was judged based on a five-point rating scale taken from Nielsen’s “Heuristic Evaluation” chapter,

- 0 - I don’t agree that this is a usability problem at all.
- 1 - Cosmetic problem only (need to be fixed if extra time is available on project).
- 2 - Minor usability problem (fixing this should be given low priority).
- 3 - Major usability problem (important to fix, should be given high priority).
- 4 - Usability catastrophe (imperative to fix this before app can be released).

Debrief and Results

Once I finished all the evaluations, I reviewed the logging sheets and the videos recorded, consolidated all the findings into groups with similar aspects. In total I found nine issues. Each finding was given a severity rating based on the scale listed above. I prioritized all the findings into two categories, key findings and minor findings. For this report I am focused on the five critical findings, which are described in this report, and the four minor findings which are listed below.

1.4 Finding and Recommendations

Summary Results

From doing the usability test of the app, I looked for issues during the execution of the tasks. Only one of the five participants could perform all four tasks, the other the participants failed to perform task #3.

All the participants liked the app. They think that the design of the app is simple and easy to use, providing useful information to users. This is reflected on the SUS score (System Usability Scale), obtaining an overall score of 94/100 points, which is above of the average 68.

On average, it took the participants around 17 minutes to complete all the tasks.

Key Findings

Finding 1: The quick widget for quick activation of the function “Robbery” is not visible.

Severity: 4/4

While performing task #3 “Activate function Robbery”, only one participant could do it, the rest of the participants didn’t notice the quick widget on the locked screen. The five participants thought that the icon shown on the screen was part of the background and not an option that they could click. Only one of them tried and tapped the icon, therefore he could perform the task. Some of the participants were expecting to activate the function pushing one of the physical buttons (power on/off, volume, home) or on the Drag down menu (Quick setting menu). They knew it should be something easy and quick to do, but couldn’t recognize the quick widget.

Recommendation: Improve the design of the quick widget and make it more visible on the screen. Use shapes that suggest protection, making the logo more appealing based on the purpose of the app.

Finding 2: It is difficult for users to interpret the map and navigate on it.

Severity: 3/4

For the task #1 “Check map”, participants found easy access the map, but when they were on it, they couldn’t understand very well the information provided. Participants couldn’t recognize what areas were marked as dangerous, and also the pins were not clear for them. Additionally, they were looking for the function “Search” which wasn’t included in the prototype, as well as using the touchscreen for navigating on the map, which also wasn’t included.

Recommendation: Apply colors to the map and add the function “Search”, redesign the pins using an image that suggests robbery, and make more visible the areas marked as dangerous.

Finding 3: The labels of some functions and buttons are not clear.

Severity: 2/4

Even though participants could perform three of the four tasks, they considered that some labels are not clear or could be improved. Specifically, they considered that the option “Report an event” should be called “Report a robbery”, because the only kind of event that users can report are robberies. Also, when users cancel the function “Robbery”, the button “Cancel Activation” is confusing because both words are opposite (Cancel and Activate).

Recommendation: Rename the labels of both examples described in the finding, analyze the labels of the rest of the functions and buttons, and rename if necessary.

Finding 4: The app doesn't allow users to add a description when reporting an event.

Severity: 2/4

While performing the task #2 "Report an event", participants wanted to add a description in order to provide more information and details about the event. Participants considered that some smartphones don't have a good camera, so adding a description could be useful. Currently the app doesn't have that function.

Recommendation: Add a text box under the picture so users can add a description and provide more details about the event.

Finding 5: The design of the main menu is too simple and not well organized.

Severity 2/4

While performing all the tasks, participants thought that the design was too simple and could be more attractive and understandable if there were some icons. Also, they considered that the order of the functions could be change, organizing them from the most frequently used to least used, and eliminating the option "Exit app".

Recommendation: Add some icons to the menu, using images that make it easier for the users to identify the functions, change the order of the functions from most to least frequently used, and eliminate the function "Exit app" from the main menu.

Minor findings

On the next table are the minor findings that I won't include in the design, basically because these are features that don't fit with the main purpose of the app, or are not relevant for the design at this point.

No.	Integrated	Frequency	Severity	System Location
1	Add animation to the screens suggesting how to interact with the app.	2	0	Different screens
2	Integrate functions with other apps (example Spotify, Waze, Driving with Google Maps).	2	0	Screen "Check Map"
3	Add a backup function.	2	1	Screen "Settings"
4	Validate the events reported with the police.	2	1	Screen "Report an event".

1.5 Limitations

While performing the tests, I encountered the follow limitations:

- All of the users are Spanish native speakers, having English as a second language. This aspect could affect the time of execution, as well as how easily they understood the tasks and interacted with the app.
- Because the paper prototype was on black and white, some of the functions were not easy to understand, as well as some of the content on the screens.
- While performing the tasks, users wanted to interact with other functions of the app, which was impossible because I only had available the screens needed for the tasks under evaluation.

1.6 Conclusion

In general, all the participants liked the design and the functions of the app, even though they considered that there are some changes that could improve the user's experience. Most of the findings are minor issues, two of them are critical, and they need to be fix in the next prototype.

The following improvements should be including in the next prototype (Med-fi):

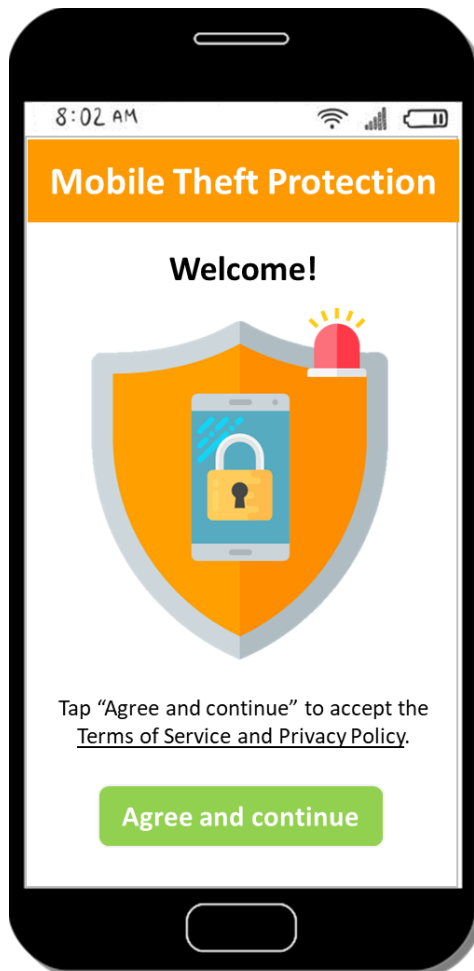
- Make more visible the quick widget "Robbery".
- Add the function "Search" on the map.
- Change the current labels for others that are more understandable for users.
- Allow users to add a description when reporting a robbery.
- Add icons to the interface of the app and reorganize the functions.

PART 2: Med-Fi Prototype

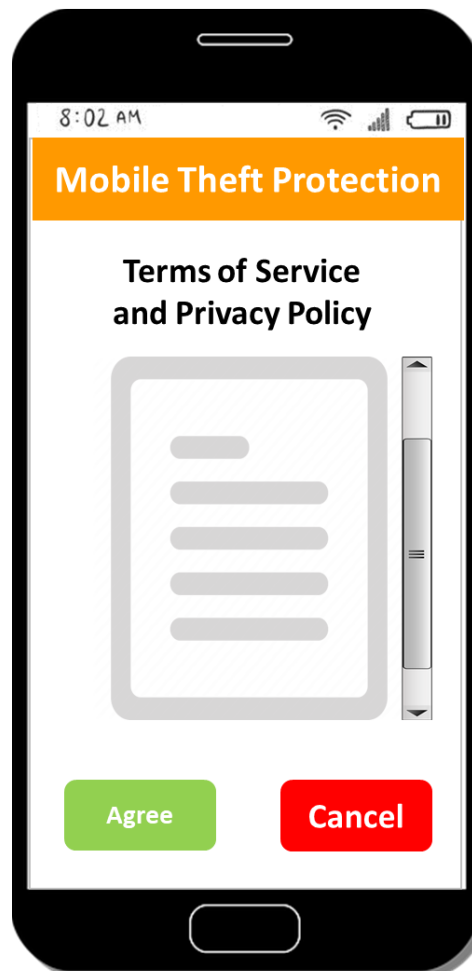
After performing the usability test and reviewed all the findings, I analyzed all the recommendations for the key findings and explored different solutions for addressing the issues found. After the ideation process, I stablished the solutions to apply, incorporating the solutions into the improved design of the app. In the next pages you can find the medium fidelity prototype Med-Fi of the app "Mobile Theft Protection".

I used **InVision** for creating an interactive prototype of the app, you can access the prototype on the next link: <https://invis.io/CUG4824NGQR>

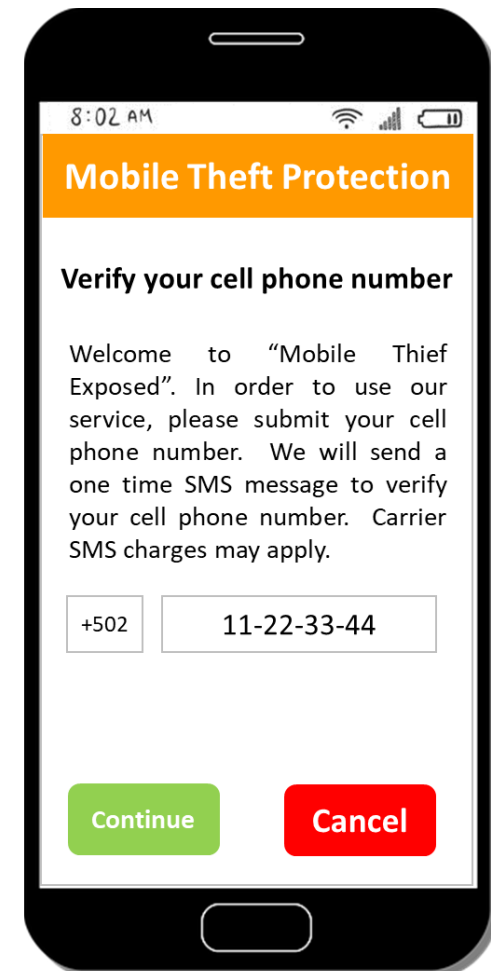
2.1.1 Med-Fi Prototype 1 to 3



Screen for agreement terms.

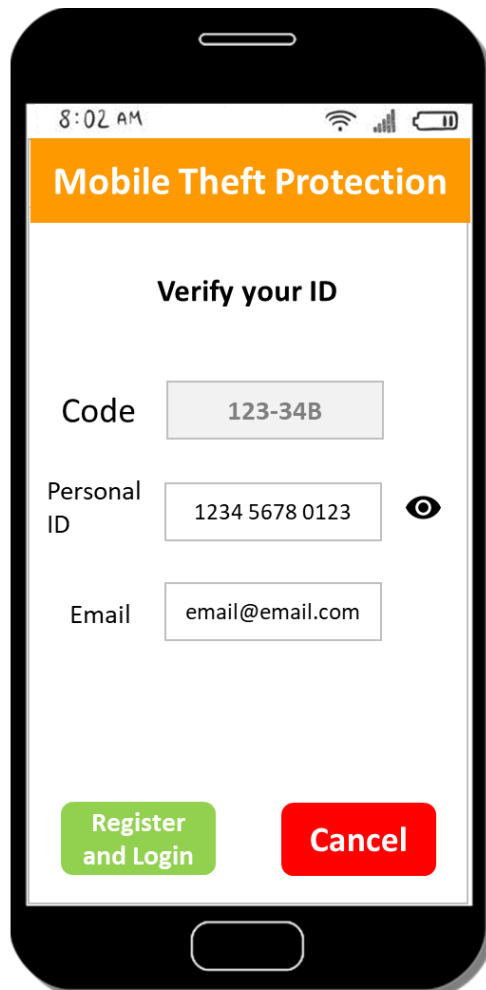


Screen showing terms of service.



Screen for verifying cell phone number.

2.1.2 Med-Fi Prototype 4-6




8:02 AM

Mobile Theft Protection

Verify your ID

Code

Personal ID 

Email

Register and Login

Cancel

Screen for registration and login.



8:02 AM

Mobile Theft Protection

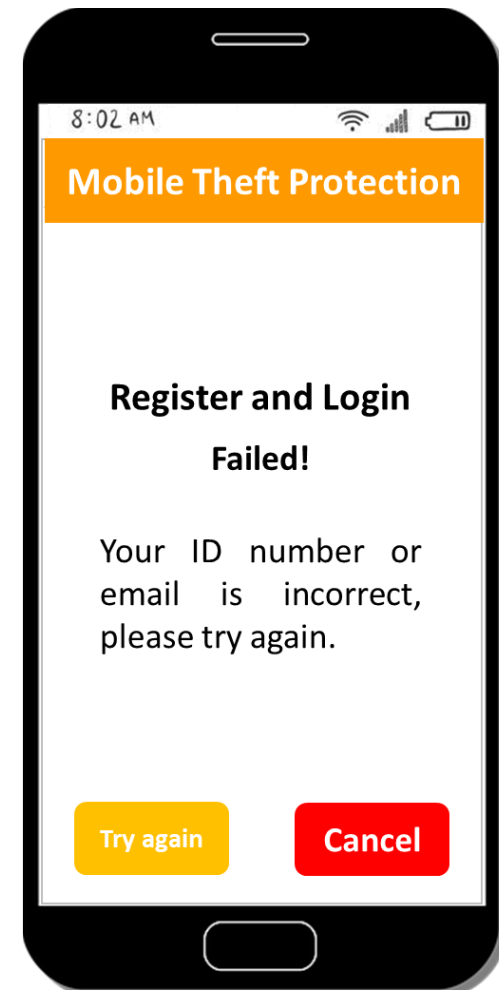
Register and Login

Successful!

Continue

Cancel

Screen for successful registration and login.



8:02 AM

Mobile Theft Protection

Register and Login

Failed!

Your ID number or email is incorrect, please try again.

Try again

Cancel

Screen for error at registration and login.