

**SafeStreets project**  
**Manuel Pedrozo, Tomás Perez Molina**



**POLITECNICO**  
**MILANO 1863**

# **Acceptance Test Deliverable**

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<b>Deliverable:</b>	ATD
<b>Title:</b>	Acceptance Test Deliverable
<b>Authors:</b>	Manuel Pedrozo, Tomás Perez Molina
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<b>Download page:</b>	<a href="https://github.com/lethanity/PedrozoPerez">https://github.com/lethanity/PedrozoPerez</a>
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# **1 Introduction**

## **1.1 Purpose and Scope**

The purpose of this document is to describe the focus of the acceptance tests performed on the prototype of SafeStreets developed by another group of students. The topics covered are:

- Description of the project to be analysed.
- The installation process performed in order to run the prototype.
- Acceptance tests cases considered and applied to the application.
- Other aspects to consider, concerning the quality of documentation and code.

## **1.2 Definitions and Acronyms**

### **1.2.1 Definitions**

To keep the same context and idea for the application, in this document we will use the same definitions as the team who developed the project.

- System: The software developed.
- User: A person that uses the system.
- Normal user: A person that uses the system which is not responsible for the streets' security
- Authority: A person employed by the municipality who is responsible for the security of the streets' network.
- Area: A district of a city consisting in a collection of streets which are connected together and which have a horizontal extension similar to the vertical extension.

### **1.2.2 Acronyms**

- RASD: Requirement Analysis and Specification Document
- DD: Design Document
- ITD: Implementation and Testing Deliverable
- UI: User Interface

## **1.3 Revision history**

- Version 1.0: First release

## 2 Project analysed

The project analysed is the one developed by Andrea Cappelletti and Sandro Maglione. It can be found here: <https://github.com/andreacappelletti97/CappellettiMaglione>.

The project documents referenced in order to perform the acceptance tests were the following:

- Requirements Analysis and Specification Document V1.0 (RASD1.pdf)
- Design Document V1.0 (DD1.pdf)
- Implementation and Testing Deliverable V1.0 (ITD1.pdf)

### 3 Installation setup

The steps followed to install the application were:

- Using an Android phone, follow the link provided in the instructions: <https://play.google.com/store/apps/details?id=com.cmprogrammers.safestreets>
- Download and install the app.

The application was also run from the source code, no installation of the Flutter framework was necessary, as we already developed our project using Flutter. Steps followed:

- Clone the repository
- Import the project in IntelliJIDEA
- Run the app on an emulator

## 4 Acceptance tests

The acceptance tests performed are based on the documentation provided by the team.


### 4.1 Acceptance tests based on use cases

The tests were developed taking the use cases described in the RASD and modifying them according to what was finally implemented as explained in the ITD.

The “expected steps” describe the flow we would expect to follow to complete a test, before coming into contact with the finished prototype. While the “real steps” are the steps followed to complete the use case when using the prototype.

<b>Test ID</b>	AT-001-SIGN_UP
<b>Based on</b>	Registration as a Normal User to SafeStreets
<b>Pre-requisites</b>	-
<b>Expected steps</b>	<ol style="list-style-type: none"> <li>1. The System shows the registration page.</li> <li>2. Input the following data: email, name, surname and password.</li> <li>3. Agree to the privacy policy of SafeStreets.</li> <li>4. Confirm and send the form.</li> <li>5. Receive a confirmation email to the email provided.</li> <li>6. Confirm email account following the provided link.</li> <li>7. The user is registered and logged in and is redirected to the home page.</li> </ol>
<b>Real steps</b>	<ol style="list-style-type: none"> <li>1. The system shows the registration page.</li> <li>2. Fill the form with the following data: <ul style="list-style-type: none"> <li>Name: Robert</li> <li>Surname: Jones</li> <li>Email: robert@mail.com</li> <li>Password: robert123</li> </ul> </li> <li>3. Press the Sign Up button.</li> <li>4. The user is registered and logged in and the system shows the home page.</li> </ol>
<b>Expected output</b>	User correctly registered and redirected to the home page.
<b>Outcome</b>	Success
<b>Alternative flow</b>	<ul style="list-style-type: none"> <li>• In step 4, if any field form is either empty or invalid, the message “Wrong data, impossible to sign up” is shown.</li> </ul>



<b>Test ID</b>	AT-002-REPORT_VIOLATION
<b>Based on</b>	Violation report sent by User to SafeStreets
<b>Pre-requisites</b>	Logged into the app
<b>Expected steps</b>	<ol style="list-style-type: none"> <li>1. Select the camera.</li> <li>2. The system shows the camera screen.</li> <li>3. Press the button or screen to take a picture of the violation.</li> <li>4. The system shows the form to add the type of violation.</li> <li>5. Select a type of violation.</li> <li>6. Confirm the license plate recognized by the system.</li> <li>7. Press the button to send the report.</li> <li>8. The system shows the home screen.</li> </ol>
<b>Real steps</b>	<ol style="list-style-type: none"> <li>1. Press the camera button.</li> <li>2. The system shows the camera screen.</li> <li>3. Press the button to take a picture of a car.</li> </ol> <p>Picture:</p>  <ol style="list-style-type: none"> <li>4. The system shows a form to add a license plate and select a type of violation.</li> <li>5. Enter the car license plate: FF841EE</li> <li>6. Select parking violation.</li> <li>7. Press the button to send the report.</li> <li>8. The system shows a screen with a “Report sent successfully, thanks for your contribution” message.</li> </ol>
<b>Expected output</b>	Report submitted, app redirects to home page.
<b>Real output</b>	Report submitted successfully, confirmed by a notification. App redirects to thank you message.
<b>Outcome</b>	Partial success, core functionality is working but does not redirect to the home screen as indicated in the RASD.
<b>Alternative flow</b>	<ul style="list-style-type: none"> <li>• Backing out of taking a picture after step 2 results in a continuous loading indicator displaying “Taking picture...”.</li> </ul>

**Notes** The system does not appear to detect license plates in a photo, as the license plate input is always shown. Other photos used:



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<b>Test ID</b>	AT-003-REPORT_HISTORY
<b>Based on</b>	History report requested by User.
<b>Pre-requisites</b>	Logged into the app.
<b>Expected steps</b>	<ol style="list-style-type: none"><li>1. Select the report history.</li><li>2. The system shows the report history.</li></ol>
<b>Real steps</b>	<ol style="list-style-type: none"><li>1. Press the “Get My Report” button.</li><li>2. The system shows the report history.</li></ol>
<b>Expected output</b>	The report history is displayed on the screen.
<b>Outcome</b>	Success

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<b>Test ID</b>	AT-004-CHECK_LICENSE_PLATE_VIOLATIONS
<b>Based on</b>	Checking license plate violations by an Authority.
<b>Pre-requisites</b>	Logged into the app as an Authority.
<b>Expected steps</b>	<ol style="list-style-type: none"> <li>1. Submit multiple reports for a license plate</li> <li>2. Go to home screen</li> <li>3. Input the license plate code.</li> <li>4. The system displays a list of reports for the given license plate ordered by date in descending order.</li> </ol>
<b>Real steps</b>	<ol style="list-style-type: none"> <li>1. Submit multiple reports for the license plate: "AS123AS"</li> <li>2. Go to home screen</li> <li>3. Press "Get License Plate Information"</li> <li>4. Input the license plate code "AS123AS"</li> <li>5. The system displays a list of reports for the given license plate in no apparent order</li> </ol>
<b>Expected output</b>	The list of reports for the given license plate is displayed ordered by date in descending order.
<b>Real output</b>	The list of reports for the given license plate is displayed in no apparent order.
<b>Outcome</b>	Partial success, the reports are not sorted as described in the use case.

<b>Test ID</b>	AT-005-VIOLATION_NOTIFICATION
<b>Based on</b>	Real-time notification about nearby violation for an Authority.
<b>Pre-requisites</b>	Logged into the app as an Authority with the notification service activated.
<b>Expected steps</b>	<ol style="list-style-type: none"> <li>1. Submit a report with another phone in close proximity</li> <li>2. Receive a notification.</li> <li>3. Press the notification message.</li> <li>4. The system displays the report, providing the exact location of the report.</li> </ol>
<b>Real steps</b>	<ol style="list-style-type: none"> <li>1. Subscribe to notifications for all areas available on the settings screen.</li> <li>2. Receive a notification.</li> <li>3. System displays a message stating that a new violation was reported in the area.</li> </ol>
<b>Expected output</b>	The system displays the report with its exact location.
<b>Real output</b>	The system displays a message indicating the area of the report.
<b>Outcome</b>	Partial fail, the notifications work but they do not display either the report nor its exact location.
<b>Alternative flow</b>	<ul style="list-style-type: none"> <li>• If the app is not open, a system notification pop ups, but when pressed it just opens the app on the screen it was on. If the app was completely closed, it opens it on the home screen.</li> </ul>
<b>Note</b>	One is able to receive notifications while logged in as a normal user, which should not be possible as this functionality is listed as Authority only.

<b>Test ID</b>	AT-006-LIST_AREA_VIOLATIONS
<b>Based on</b>	List of violations in an area for an Authority.
<b>Pre-requisites</b>	Logged into the app as an Authority.
<b>Expected steps</b>	<ol style="list-style-type: none"> <li>1. Submit multiple reports in a specific area</li> <li>2. Go to home screen</li> <li>3. Input the area of interest.</li> <li>4. The system shows a list of reports in the area.</li> </ol>
<b>Real steps</b>	<ol style="list-style-type: none"> <li>1. Submit multiple reports in the same area</li> <li>2. Go to home screen</li> <li>3. Press “Get Area 1 Violation”</li> <li>4. The system shows a list of reports</li> </ol>
<b>Expected output</b>	The system displays a list of reports inside the given area.
<b>Real output</b>	The system shows a list of reports, with drastically different co-ordinates
<b>Outcome</b>	Fail, the reports shown are in completely different areas. For example one is at (45.6744862, 9.1789748) which is Cabiato, Italy, while another is at (37.4219983, -122.084) which is the Google Campus in California.

## 4.2 Other acceptance tests

Taking into account the functionality implemented, further acceptance tests were performed. However, as there were no use cases for these, there are no expected steps to perform.

<b>Test ID</b>	AT-007-SIGN_IN
<b>Pre-requisites</b>	User already signed up to the system.
<b>Real steps</b>	<ol style="list-style-type: none"> <li>1. Fill the sign in form with the following data: <ul style="list-style-type: none"> <li>Email: robert@mail.com</li> <li>Password: robert123</li> </ul> </li> <li>2. Press the sign in button.</li> </ol>
<b>Expected output</b>	The system displays the home screen.
<b>Real output</b>	The system displays the home screen.
<b>Outcome</b>	Success

<b>Test ID</b>	AT-008-LOGOUT
<b>Pre-requisites</b>	Logged into the application.
<b>Real steps</b>	Press the logout button.
<b>Expected output</b>	The system displays the sign in screen and notifications are disabled.
<b>Real output</b>	The system displays the home screen and notifications are disabled.
<b>Outcome</b>	Success

<b>Test ID</b>	AT-009-AREA_SAFETY
<b>Pre-requisites</b>	Logged into the application.
<b>Real steps</b>	<ol style="list-style-type: none"><li>1. Press a “Get Area N Safety” button (N could be any of the 3 area numbers).</li><li>2. The system displays a screen indicating a safety estimation and the number of violations reported.</li></ol>
<b>Expected output</b>	The system displays the safety of the area.
<b>Real output</b>	The system displays the safety of the area.
<b>Outcome</b>	Success

## 5 Other aspects to consider

### 5.1 UI feedback

Although the basic functionality is provided, the look and feel of the application in no way matches the mockups and descriptions included in the documentation. It is clear the development effort was put into other parts of the system.

As an example, we can see below a comparison of the sign up screen in the mockup and in the final prototype:

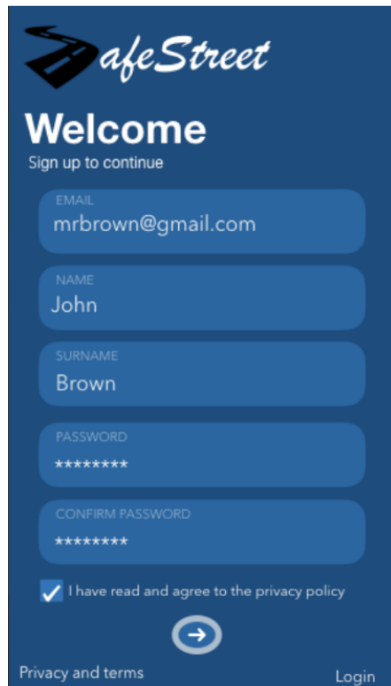


Figure 1: Mockup - Sign up.

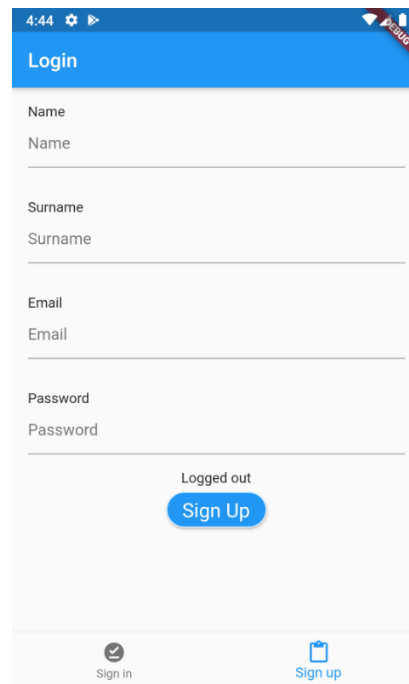


Figure 2: Prototype - Sign up.

### 5.2 Version differences

Disregarding the differences with the mockup, the installation process chosen results in different UIs and functionality for the app.

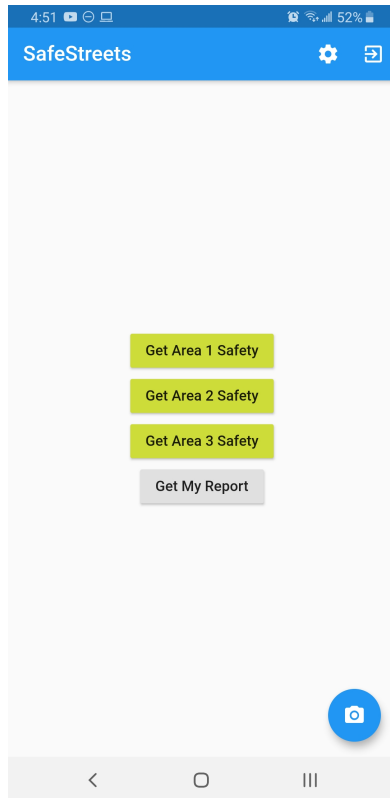


Figure 3: Play store app - Home screen.

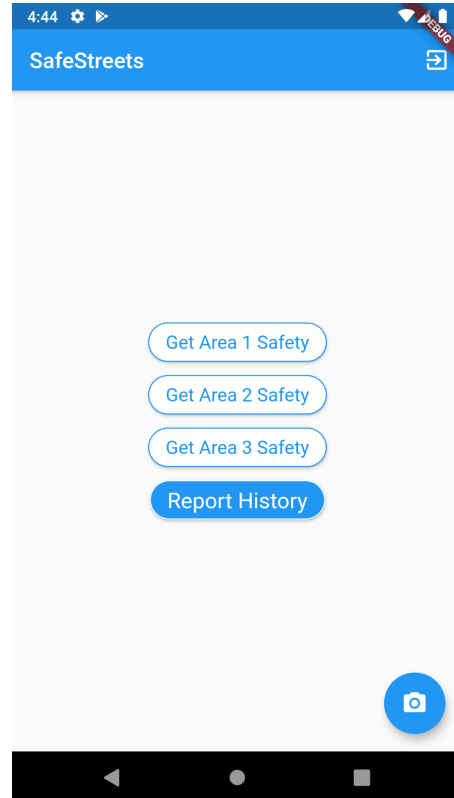


Figure 4: Source code - Home screen.

As seen in the figures, the button design is different. Moreover, when running the app from the source code there is no settings button to enable notifications.

### 5.3 Documentation inconsistencies

As seen in the UI feedback section, there are inconsistencies between the RASD and what is implemented. In addition, multiple key use cases are missing, namely the area safety functionality for users, and interventions suggestion and validation of reports for authorities. Finally, as mentioned in the acceptance tests section, the notification functionality, which should only be accessible to authorities, is also present when logged in as a normal user.



## 6 Effort Spent

### 6.1 Manuel Pedrozo

Task	Hours
Introduction & Project analysed	0.5
Installation setup	1
Acceptance tests	3
Other aspects to consider	1

Table 1: Effort spent by Manuel Pedrozo

### 6.2 Tomás Perez Molina

Task	Hours
Introduction & Project analysed	1
Installation setup	1
Acceptance tests	4
Other aspects to consider	0.5

Table 2: Effort spent by Tomás Perez Molina

## 7 References

- “SafeStreets Mandatory Project Assignment”
- “Implementation Assignment”
- Requirements Analysis and Specification Document V1.0 (RASD1.pdf)
- Design Document V1.0 (DD1.pdf)
- Implementation and Testing Deliverable V1.0 (ITD1.pdf)