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| --- | --- | --- |
| Phenomena | Shared | Who Control |
| User sees a traffic violation | NO | World |
| User wants to notify authorities | NO | World |
| User launches the application and logs in | NO | World |
| SafeStreets software is loaded checking the role of the user (end user or authority or municipality) | NO | Machine |
| User inserts the picture and the type of the violation | YES | World |
| SafeStreet application detects date, time and position from the device. | NO | Machine |
| SafeStreets asks to the user to insert again some wrong data | YES | Machine |
| User sends data | YES | World |
| SafeStreets receives a violation | NO | Machine |
| SafeStreets runs the algorithm to read the license plate | NO | Machine |
| The algorithm can’t read the license plate so SafeStreets asks to the user to insert it manually | YES | Machine |
| User inserts the license plate manually | YES | World |
| SafeStreets stores the retrieved information | NO | Machine |
| SafeStreets calculates the statistics | NO | Machine |
| User or authority or municipality mines the information | YES | World |
| SafeStreets receives data about accidents from municipality | YES | World |
| SafeStreets identifies unsafe areas | NO | Machine |
| SafeStreets suggests interventions | YES | Machine |
| SafeStreets goes out of service | YES | Machine |
| Safestreet notifies authorities near the violation which has occurred | YES | Machine |
| An authority goes in the place of the violation | NO | World |
| An authority notifies other authorities that he is going to check the violation | YES | Machine |

G1: A person (end user) who sees a traffic violation should be able to notify authorities.

G2: A person (end user) should be able to be a user of SafeStreets app.

G3: An authority should be able to be a user of SafeStreets app with a different role with respect to a citizen.

G4: An authority should be able to see the recent traffic violations and statistics about them.

G5: A user should be able to see the statistics regarding traffic violations.

G6: Municipality should be able to collaborate with SafeStreets in order to provide information about accidents occurred in its territory.

G7: Municipality should be able to know the most unsafe areas of its territory.

G8: A municipality should be able to know possible interventions it can do in order to improve the unsafe areas.

G9: An authority should be able to receive notifications about violations around him.

D1: A person (end user) knows the traffic rules.

D2: A person (end user) knows that he can notify the authority if there is a traffic violation.

D3: A person (end user) has a phone with a camera, internet connection and GPS, he knows SafeStreets app and he has SafeStreets app on his phone.

D4: A user of SafeStreets is identified by the application.

D5: It is possible to verify that an authority is really such (through a governmental code for example).

D6: An authority have a device on which there is SafeStreets software.

D7: A municipality has data about accidents occurred in its jurisdiction stored.

D8: It is possible to verify that a municipality is really such (through a governmental code for example).

D9: A municipality has a device with SafeStreets software.

D10: There is internet access around the place where violation occurred.

D11: An authority user is able to reach the position of a violations when notified.

D12: Users are fair with each other.

D13: Users send data about a violation from the position where the violation occurred.

R1: When a user sees a traffic violation, SafeStreet mobile application must allow him to take a picture of it, insert a description and immediately send the information to authorities.

R2: When SafeStreets app is launched, the user must be able to log in if he is already registered, otherwise he can register himself, and then log in.

R3: When an user wants to register himself as authority, SafeStreet software must verify that he is really an authority.

R4: When an user wants to register himself as municipality, SafeStreet software must verify that he is really a municipality.

R5: When an end user sends data, SafeStreets application must detect automatically the date, the time and the position from the device. The position is taken from the GPS of the phone.

R5.1: When detecting the date, the time and the position from the device, if it is not able to take one of this information SafeStreet application must notify the user.

R7: When data inserted from the user are wrong, the app asks to him to insert again data, specifying which ones are wrong and why.

R8: When an authority logs in from his device, SafeStreets must allow him to see information about the traffic violations sent by the end users and about statistics on the violations.

R9: When an end user or a municipality user logs in, SafeStreets must not allow him to see the traffic violations sent by the other end users.

R10: When an end user logs in from his device, SafeStreets must allow him to see statistics about the traffic violations.

R12: When a municipality user logs in from his device, SafeStreets must allow him to see statistics about the traffic violations, unsafe areas and possible interventions.

R16: When a violation is sent, SafeStreets dispatching software must find the nearest authority users and notify them.

R17: When an authority user is notified, SafeStreet software must allow him to warn other authorities that received the same notification that he is going to check the violation so that not too much authorities goes to the same violation.

Traceability matrix

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Row ID | Goal ID | Assumption ID | Req ID | Use case ID | comments |
| r1 | G1 | D1,D2,D3,D4,D10 | RE1 | U1 |  |
| r2 | G2 | D3,D4 | RE2 |  |  |
| r3 | G3 | D4,D5 | RE3 |  |  |
| r4 | G4 | D5,D6 | RE8 | Non so numero |  |