**Basic Service Goals**

G1: users could report violation to SafeStreet

G2: Users could see customized statistics about verified violations reported through SafeStreet

G3: Municipalities should be able to access data of violation suitable for mining operation

**AF 1**

G4: Users and Municipalities could see updating list of unsafe areas

G5: Users could opt to have notifications about the safety of an area

G6: Users and Municipalities could see SafeStreets suggestion about unsafe area

**AF 2**

G7: SafeStreets provides the local police with data of violation suitable for ticketing

G8: SafeStreets monitors and shows trends of violations

**World and Machine Phenomenon**

We include world and shared phenomena. Ignore machine phenomenon because in RASD document details about machine phenomenon should not be addressed

|  |  |
| --- | --- |
| **Phenomenon** | **World/Shared** |
| The occurrence of parking violations | World |
| Users willing to report parking violations through SafeStreets | World |
| Municipalities willing to use and have SafeStreets’ data | World |
| Local Police willing to use SafeStreets’ data for ticketing | World |
| Details of parking violation (Image,Type, Location, Time) reported through SafeStreets | Shared |
|  |  |

**Basic Service Goals:**

**G1: users could input data of violation to SafeStreet**

R1: SafeStreets must allow a user to register a new account

R2: SafeStreets must allow a user to login to his/her account

R3: SafeStreets must allow its registered users to upload or take images, to select the type of the violation, and to input the position of the violation

D1: users are using their mobile phones with SafeStreets properly installed

D2: the system uses an external service that can read the license plate

D3: Safestreets is authorized to store images in its database

**G2: Images of violation should be unmodified and protected from alteration**

R6: SafeStreets must not allow users to upload photos of violation to SafeStreets database from other applications

R7: SafeStreets must accept images taken only using SafeStreets’ camera

R5: SafeStreets must run hashing function on every image taken by the app

R8: SafeStreets must store on the user side the image taken and its signature(hash)

R9: SafeStrees must send the data of violation to the database as soon as internet service is available on user’s mobile

R3: SafeStreets must store the data of violation in a database

    D3: Users have taken images violation only through the app

    D4: Users mobile have enough space to store images of violation

D5: Users have allowed SafeStreets application to use storage, camera, internet service

D6: SafeStreets is using a secure communication protocol

**G3: users could see customized statistics about verified violations reported through SafeStreet**

    R3: SafeStreets must store the data of violation in a database

    R4: SafeStreets must analyze data of violation using some library package

    R5: SafeStreets uses map service to put violations into zones

R6: SafeStreets must anonymized the data seen by users

**R7: SafeStreets must allow users to filter data of violation by location, type, time, and frequency**

D3: SafeStreets is authorized to store data of violation

**G4:  Municipalities should be able to access data of violation suitable for mining operation**

R6: SafeStreets must allow a municipality to register a new account

R7: Municipalities must be registered/identified entities

R3: SafeStreets must store data of violation in a database

R8:

**Advanced Function 1 Goals**

**G5: SafeStreet should provide list of unsafe areas and suggest ways to reduce their unsafety, and to notify users living in or near that area**

**R9:**

**flow**

**1-     Receive the data of accidents from municipalities (accident type, license, location, time)**

**2-     Analyze the data with existing data of violations**

**3-     Define unsafe areas**

**4-     Generate list of unsafe areas**

**5-     Suggest possible ways to reduce unsafety of area**

**6-     Send notifications to users living in or near that area**

**Ok, now how should we define unsafe area? Suggestion: an area is unsafe if one or more of the following condition is met**

**1-     # of accidents in the last month/week/day > 10 for e.g.**

**2-     # of accidents > Acc\_Threshold1 & # of parking violation > Vio\_TH1**

**3-     # of**

**We can also use a parameter to indicate the unsafety of an area. Look at the table**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **area** | **Condition** | **Safety** | **Suggestion** | **Notification** |
| **Zone 1** | **None** | **Safe** |  |  |
| **z2** | **1 or 2 or 3 or 4** | **Somewhat unsafe** |  |  |
| **z3** | **1+2+3** | **Very unsafe** |  |  |

**Advanced Function 2 Goals**

**Types of Violations**

**So we should include a set of violation the user can input through the app. Write down a violation you think it is good to include:**

**1- vehicle parking in a bike lane**

**2- vehicle parking in a disability parks**

**3- double parking**

**4- walking in and occupying a bike lane**

**5-**

**.**

**9- other: please describe**

****

**Violation in the SafeStreets database**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Violation Type | Identification  License plate | Date | Time | Location | Input by | Verified | Photo | Hash value |
| See above | ABC-123 | 10-Nov | 07:07 | Street name | User | yes /no | Actual photo | #@%\* |

**Statistics offered to users:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Violation Type | Location | Date | Time | Number of violations last month/week/day |

**Remember that this data is going to be used by local police for ticketing, so we should define a way to identify who did the violation. For violation with vehicles license plate is enough**

**Q) Should we allow users to input other violations**

**Analysis**

**Q0) who are the users of the application?**

**1- regular individual users with a mobile phone**

**2- municipalities using**

**Q1) what are the actions the application offers to individual users?**

**1- use the application either as a guest or as a registered user**

**2- upload an image on the app or take it from the app**

**3- being able to display violations history**

**Q2) what kind of information the app offers to users?**

**1- define what are unsafe areas**

**2- list unsafe areas**

**2- give suggestions about avoiding unsafe areas**

**3- give suggestions for improving safety index of an unsafe area**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| **Users** | **Upload** | **Images of** | **violations** |
| **Users** | **Display** | **Info of** | **violation** |
| **User** | **Mine** | **Info of** | **Violation** |
| **App** | **store** | **Info of** | **Violation** |
| **App** | **Verify** | **Info of** | **Violation** |
| **App** | **Define** | **Unsafe areas** |  |
| **App** | **list** | **Unsafe areas** |  |
| **App** | **Analyze** | **Info of** | **Violation** |
| **App** | **list** | **Top violations** |  |
| **App** | **Ensure** | **Image** | **Chain of custody** |
| **App** | **Display** | **Periodic Trends of Violation** |  |
| **App** | **Allow for** | **Mining Info** |  |
| **Authority** | **Mine** | **Info** |  |
| **Authority** | **Use** | **Info for** | **Ticketing** |
|  |  |  |  |

**Data representation to user:  
    1- see only data related to his/her zone**

**2- see data related to all zones**

**3- has the option of both**

**Municipality 1 and municipality 2 = disjoint area(zone) 1 and area(zone) 2**