



POLITECNICO
MILANO 1863

REQUIREMENTS ANALYSIS AND SPECIFICATIONS DOCUMENT

SOFTWARE ENGINEERING II PROJECT - A.Y. 2019-2020

SafeStreets

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1 Introduction

1.1 Purpose

The main purpose of SafeStreets is to create a software that provides users the possibility to notify authorities when parking violations occur providing some useful features such as finding the most unsafe areas around them and proposing suggestions to the municipality. In addition, SafeStreets will enable the Local Police to generate traffic tickets from it and to cross all the information it owns with the data of the accidents happened.

Specifically, we want to realize a product which is able to:

- Retrieve pictures uploaded by users of parking violations with possible attached information such as license plate position in the image, type of violation and GPS meta-data.
- Automatically complete the data of a reported violation running a recognition algorithm able to read license plate text.
- Highlight to users the areas with the highest frequency of violations and information about vehicles that commit most violations.
- Automatically identify potentially unsafe areas crossing SafeStreets' information with accident datas from the Local Police, possibly suggesting possible interventions.
- Send violations data to the Local Police to automatically create new traffic tickets if it can be proved that the chain of custody of the information coming from the users is never broken.
- Generate statistics related to ticket emissions to inform users about how effective SafeStreets is.

On the other hand, the purpose of this paper is to define in a detailed way all the functions and requirements of the application.

In doing this, we start focusing on a brief overview to characterize the product with relevance to its interaction with the world, then we will proceed deeply in analysing which functions are relevant and should be provided, and which requirements are needed to the stakeholders.

1.2 Scope

As our software needs to be compliant with different laws and as it needs to interact with the Local Police, initially, SafeStreets will have a restricted geographic domain coincident with the Italian city of Milan.

Indeed, in order to provide the most complete service, SafeStreets will require the access the Local Police web application to be able to process traffic tickets.

It goes without saying that to organize this kind of service in the most effective way we must experiment first this activity in a internationally-visible city, then applying that to anyone who will demand.

1.2.1 The world-machine phenomena

The first model of our system to be presented is the model "The world and the machine" by M. Jackson and P. Zave. This model highlights the division between phenomena that happen entirely either in the world or in the machine, and those that are shared between the two of them.

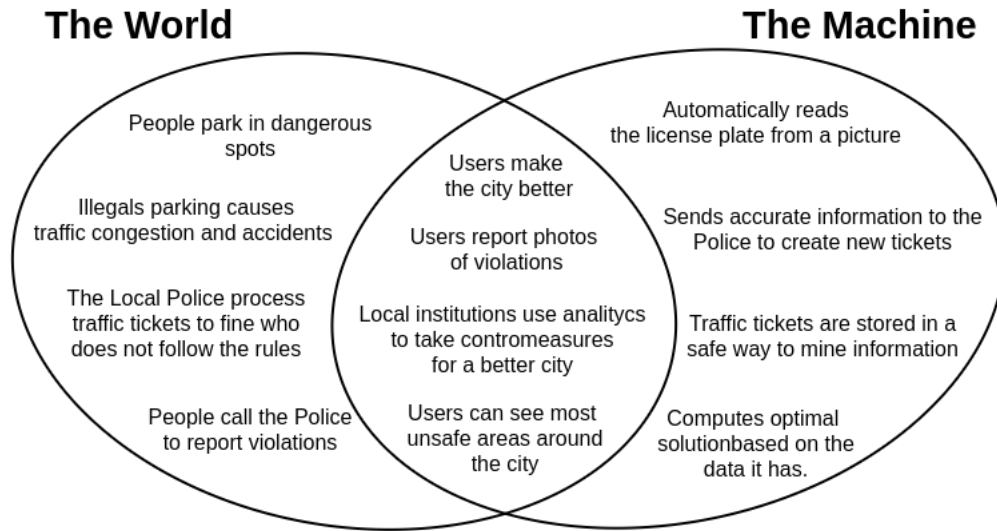


Figure 1: The world-machine phenomena chart.

1.3 Goals

1.3.1 Traceability Table

1.4 Definition and Acronyms

1.4.1 Definitions

1.4.2 Acronyms

1.5 Revision

1.6 Actors

- *Guest*: This actor plays the role of a person who is not registered and thus logged in.
- *User*: This actor refers to the condition of a normal person (not an officer) already signed up and logged.
- *Officer*: This actor represent a signed up and logged in public officer.

1.7 References

- The 2019-2020 Software Engineering 2 Project Assignment document
- The IEEE Standard for RASD

1.8 Document Structure