

AA 2019/2020

Computer Science and Engineering

Software Engineering 2 Project

SafeStreets

**RASD**

Requirement Analysis and Specification Document

version 1.0 --- 04/11/2019

|  |  |
| --- | --- |
| Authors: | Professor: |
| Aida Gasanova | Elisabetta Di Nitto |
| Alexandre Batistella Bellas |  |
| Ekaterina Efremova |  |

**Table of Contents**

[1 Introduction 3](#_Toc23735408)

[1.1 Purpose 3](#_Toc23735409)

[1.1.1 General purpose 3](#_Toc23735410)

[1.1.2 Goals 3](#_Toc23735411)

[1.2 Scope 3](#_Toc23735412)

[1.3 Definitions, acronyms and abbreviations 3](#_Toc23735413)

[1.3.1 Definitions 3](#_Toc23735414)

[1.3.2 Acronyms 3](#_Toc23735415)

[1.3.3 Abbreviations 3](#_Toc23735416)

[1.4 Reference documents 3](#_Toc23735417)

[1.5 Overview 3](#_Toc23735418)

[2 Overall Description 5](#_Toc23735419)

[2.1 Product perspective 5](#_Toc23735420)

[2.2 Product functions 5](#_Toc23735421)

[2.3 User characteristics 5](#_Toc23735422)

[2.4 Constraints 5](#_Toc23735423)

[2.5 Assumptions and Dependencies 5](#_Toc23735424)

[3 Specific Requirements 6](#_Toc23735425)

[3.1 External interface requirements 6](#_Toc23735426)

[3.1.1 User interfaces 6](#_Toc23735427)

[3.1.2 Hardware interfaces 6](#_Toc23735428)

[3.1.3 Software interfaces 6](#_Toc23735429)

[3.1.4 Communication interfaces 6](#_Toc23735430)

[3.2 Functional requirements 6](#_Toc23735431)

[3.3 Performance requirements 6](#_Toc23735432)

[3.4 Design constraints 6](#_Toc23735433)

[3.5 Software system attributes 6](#_Toc23735434)

[3.5.1 Reliability 6](#_Toc23735435)

[3.5.2 Availability 6](#_Toc23735436)

[3.5.3 Security 6](#_Toc23735437)

[3.5.4 Maintainability 6](#_Toc23735438)

[3.5.5 Compatibility 6](#_Toc23735439)

[3.6 Other requirements 6](#_Toc23735440)

[4 Formal analysis with Alloy modeling 7](#_Toc23735441)

[5 Appendices 8](#_Toc23735442)

[5.1 Used tools 8](#_Toc23735443)

[5.2 Hours of effort spent 8](#_Toc23735444)

1. Introduction
   1. Purpose
      1. General purpose

This document represents the Requirement Analysis and Specification Document (RASD). The main purpose of this document is to fully describe the software product in order to help developers model it.

This document describes SafeStreets application, which can help the prevention of traffic violations, and in particular parking violations, by sending the information obtained by ordinary pedestrians who are users of this application to the authorities. Both sides, users and authorities, can use this data for useful purposes, for example, see areas that have a high frequency of violations, or even the vehicles that commit the most violations. Besides this, the application can cross its own data with external data from municipally (if available) to identify potentially unsafe areas, and suggest possible interventions. Lastly, the application can provide information to a municipally system that emits traffic tickets to people that committed violations, since the information came from the application is with guaranteed integrity.

* + 1. Goals
  1. Scope
  2. Definitions, acronyms and abbreviations
     1. Definitions
     2. Acronyms
     3. Abbreviations
  3. Reference documents
  4. Overview

1. Overall Description
   1. Product perspective
   2. Product functions
   3. User characteristics
   4. Constraints
   5. Assumptions and Dependencies
2. Specific Requirements
   1. External interface requirements
      1. User interfaces
      2. Hardware interfaces
      3. Software interfaces
      4. Communication interfaces
   2. Functional requirements
   3. Performance requirements
   4. Design constraints
   5. Software system attributes
      1. Reliability
      2. Availability
      3. Security
      4. Maintainability
      5. Compatibility
   6. Other requirements
3. Formal analysis with Alloy modeling
4. Appendices
   1. Used tools

The tools used for the development of this document were those ones listed below.

* Microsoft Office Word 2016
* GitHub
* Alloy Analyser 4.2
  1. Hours of effort spent

The hours spent by the group are listed below, differentiating for each participant.

|  |  |  |  |
| --- | --- | --- | --- |
| **Task** | **Hours spent** | | |
| **Aida Gasanova** | **Alexandre**  **Batistella Bellas** | **Ekaterine Efremova** |
| Introduction |  |  |  |
| Product perspective |  |  |  |
| Product functions |  |  |  |
| Domain assumptions |  |  |  |
| External interface requirements |  |  |  |
| Functional requirements |  |  |  |
| Non-functional requirements |  |  |  |
| Formal analysis using Alloy |  |  |  |