

**R**equirements **A**nalysis and

**S**pecification **D**ocument (**RASD**)

Computer Science and Engineering (CSE)

Software Engineering 2 Project

Year 2015/16



**STUDENTS:**

*Martino Andrea (****788701****)*

*Marchesani Francesco (****852444****)*

**PROFESSOR:**

*Mirandola Raffaela*

**Index**

1. **Introduction**
   1. **Purpose of the requirements model**
   2. **RASD Approach: “The world and the machine”**
   3. **myTaxiService: main goals**
   4. **Current state of the service and future prospect**
   5. **Limitations of the product and new features possibilities**
   6. Definitions, acronyms and abbreviations
   7. References
2. **Overall description** 
   1. **Overall description**
   2. **User characteristics**
   3. **Constraints**
   4. **Assumptions ad dependencies**
   5. **Future possible implementations**
3. **Specific requirements**
   1. **External interface requirements**
   2. **Functional requirements**
   3. **Scenarios**
   4. **UML models**
   5. **Non-functional requirements**
4. **Alloy and other information**
   1. **Alloy**
   2. **Software and Tools used**
   3. **Hours of work**

**Introduction**

**1.1 Purpose of the requirements model**

The main purpose of this RASD (*Requirements Analysis and Specification Document*) is to examine in depth the phases of analysis and specification of the project requirements.

The project name is *myTaxiDriver*, which is the Software Engineering 2 project of year 2015/16 at Politecnico di Milano.

The reference model used in this project is **IEEE/ANSI 830-1998**. This is one of the most widely known requirements document standard. It is important to underline that the specifications of this document may evolve in the future (this may occurs for several causes).

Anyway, we will try to maintain coherence with this document in the next steps as much as possible.

**ANDREA**

* 1. **RASD Approach: “The world and the machine”**

Identify the right requirements may be a difficult thing to do if the approach is not good enough. The main thing to understand is the link between what happens in the real world (*The World*) and the software technologies (*The Machine*). This link is Requirements Engineering.

**Requirements Engineering**

**Software**

**Technologies**

**Real World**

**Demands**

The approach followed in this document is known as “*The world and the machine*”. This one is the approach defined by Michael Jackson and Pamela Dave. There are two main entities in this approach:

* **The World**: part of the real World that interfaces with the software to be and which is influenced by him.
* **The Machine:** part of the software to be. That is the union of the developed software and the hardware where software will be executed.

**EVENTUALLY ADD A SETs IMAGE HERE!**

**ANDREA**

* 1. **myTaxiService: main goals**
  2. **Current state of the service and future prospect**

**SYSTEM AS IS**

Taxi drivers are equipped with a cellphone and an earpiece to be able to answer calls during driving.

Taxis are equipped with a proprietary device placed on the cockpit that periodically sends GPS information to TAXISPA using GSM connection and acts as a taximeter.

Currently if a user wants to use a taxi he/her must call TAXISPA phone number and provide his/her position with accuracy, if possible. Every call is redirected from a switchboard system to an available employer that takes care of the customer. The employer watches a computer screen that shows every taxi driver location over a map to decide which one could be available to take the call.

Then the employer puts on hold the customer and calls the driver to check his/her availability and report the response to the customer.

Currently is not possible to reserve a taxi before the very same day.

**SYSTEM TO BE**

*myTaxiService* will be built from scratch. This new product is not a specific evolution of the existing system.

*myTaxiService* aim to provide new ways of organizing work efficiently to ensure an always growing customer-base and quality of service, reduce the total operating costs of TAXISPA and put TAXISPA in a stronger competitive position. myTaxiService will use mobile and web technologies and will add new features.

* 1. **Limitations of the product and new features possibilities**
  2. **Definitions, acronyms and abbreviations**

**1.7 References**

This document was produced by faithfully following the directives contained in the **IEEE/ANSII 830-1998** (as we said in the chapter *1.1*).

It also revealed and very useful to consult some of the RASD presented over the previous academic years, trying to identify critical issues, patterns and isolate sections developed in an accurate, thorough and organic way.

Here are the documents used as reference:

* M*. Jackson, P. Zave, "Deriving Specifications from Requirements: An Example", Proceedings of ICSE 95, 1995*
* *M. Jackson, P. Zave, "Four Dark Corners of Requirements Engineering", TOSEM, 1997*
* *B. Nuseibeh, S. Easterbrook, "Requirements Engineering: A Roadmap", Proceedings ICSE 2000*
* *M. Jackson, Software Requirements and Specifications: A Lexicon of Practice, Principles and Prejudices, ACM Press Books, 1995*
* *830-1998 IEEE/ANSII Recommended Practice for Software Requirements Specifications,*

*http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=720574&tag=1&url=http%3A%2F%2Fieeexplore.ieee.org%2Fxpls%2Fabs\_all.jsp%3Farnumber%3D720574%26tag%3D1*

* *Various projects of the past years (from the* ***Beep*** *platform)*
* *Slides of the course by Prof. Raffaela Mirandola*