

RASD

(**R**equirements **A**nalysis and **S**pecification **D**ocument)

for

Travlendar+

**REFERENCE PROFESSOR**

Di Nitto Elisabetta

**STUDENTS**

Biasielli Matteo

Capo Emilio

Di Fatta Mattia

Software Engineering 2 – A.Y. 2017/2018 – v1.0

# **Table of contents**

# **INTRODUCTION**

## **Purpose**

## **Scope**

## **Definitions, Acronyms, Abbreviations**

### **Definitions**

### **Acronyms**

### **Abbreviations**

## **Revision history**

## **Reference Documents**

## **Document Structure**

# **OVERALL DESCRIPTION**

## **Product perspective**

## **Product functions**

## **User characteristics**

## **Assumptions, dependencies and constraints**

### **Assumptions**

### **Dependencies**

### **Constraints**

# **SPECIFIC REQUIREMENTS**

## **External Interface Requirements**

### **User Interfaces**

### **Hardware Interfaces**

### **Software Interfaces**

### **Communication Interfaces**

## **Functional Requirements**

## **Performance Requirements**

## **Design Constraints**

### **Standard compliance**

### **Hardware limitations**

### **Any other constraint**

## **Software System Attributes**

### **Reliability**

### **Availability**

### **Security**

### **Maintainability**

### **Portability**

# **FORMAL ANALYSIS USING ALLOY**

# **EFFORT SPENT**

# **REFERENCES**

# **INTRODUCTION**

## **Purpose**

This document is ment to be a reference for any person who has an interest in the project. This includes, but is not limited to, development team members, stakeholders and end users.

It contains both a descriptive analysis of the project to be developed and a series of models to effectively remove any ambiguities regarding the project requirements.

Because of its own nature, the document might be updated during the development of the project to fulfill any new upcaming need.

## **Scope**

Travlendar+ is a calendar-based mobile application that supports users in arranging meetings and appointments.

This is achieved through a series of features:

* **Creation of meetings**, with the possibility of a warning if the location is not reachable in the allotted time;
* **Computation of travel time** between appointments to make sure that the user is not late;
* **Identification of the best mobility option** among the available ones, including public transportation and sharing systems services. Possible suggestion criterias are potential strikes, weather and user preferences, like walk distance constraints, time ranges regarding the usage of public means and also the possibility to minimize carbon footprint.
* **Creation of customized breaks**, that allow flexibility in a given time range.
* **Purchase of ticket or passes** related to the public transportation means.

## **Definitions, acronyms, abbreviations**

### **Definitions**

*User* – Any person who might me using the application.

*Schedule* – The user’s plan for a given day.

*Event* – The generic activity which is part of a schedule.

*Meeting* – A type of event which is set in a given time span.

*Break* – A type of event which lasts for a given time in a given time span.

*Travel time* – The time required to reach a given meeting location from the actual location.

*Time span* – The duration of a given event.

### **Acronyms**

### **Abbreviations**

## **Revision History**

## **Reference Documents**

* Project assignment document
* Projects from previous A.Y. s.

## **Document Structure**

*Introduction*: An introductory part that gives a general idea of what the project is about. It also serves as a disambiguation for the different terms and acronyms that will be used into the document.

*Overall Description*: This section contains a more detailed explanation of the project. It also highlights the several assumptions and constraints related to the project.

*Specific Requirements*: This section goes deep into the analysis of the requirements of the project, from an interface, functional and performance point of view. Many different models are used to highlight and justify the design choices. In the end, the main software system attributes are described.

*Formal analysis using alloy*: This section contains the formal diagrams and simulation results obtained with the alloy software.

*Effort spent*: This section describes the group members efforts spent on the project in terms of hours.

**References**:

# **OVERALL DESCRIPTION**

## **Product Perspective**

## **Product Functions**

## **User Characteristics**

## **Assumptions, dependancies and constraints**

### **Assumptions**

A1 – A user cannot create an event whose Time Span is overlapping with the time span of another event.

A2 – A user will get a notification every time an event starts or ends.

A3 – The purchase of a ticket or a pass is final.

A4 – The purchase function requires registration and data about the user’s credit card.

The application requires an internet connection.

Weather forecast and maps services are outsourced.

The registration process requires: username, password, email address.

Approaching an event on the schedule, the system will start notifying the user about the means/roads to take accordingly to the required travel time.

### **Dependancies**

### **Constraints**