**Software Engineering 2: Travlendar+**

**D**esign **d**ocument

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# INTRODUCTION

## purpose

## Scope

**Analysis of the world phenomena**

Nowadays, time management is one of the most important things in the context of today's society, especially in big cities, where the variety of means of transport is so great to allow a better optimization of a person's events organization. ​​Travlendar+ borns as  a digital calendar that allows the user not only to display his events, but also to provide the user the best way to reach the events in the best possible way, according to the criteria chosen by him.

**Analysis of the shared phenomena**

There are two different kinds of shared phenomena, the ﬁrst one  includes phenomena that are controlled by the world and observed by the machine, such as the GPS position of the user, the traffic, the weather and for example, something quite abstract such as the time schedule of a bus or a tube. The second one contains all those phenomena controlled by the machine and observed by the world (in according to the domain) such as : the user follows Travlendar+  indications, the user inserts the true duration time events, the user uses the system inside the correct geographic area etc.

## Definitions

* **User**: any individual subscribed to the service.
* **Visitor**: an individual not subscribed to the service.
* **Event**: an appointment that could be registered in the calendar.
* **Free Time Interval**: with this term we refer to the interval of time that user could registered in the calendar to indicate where the flexible break must be spent.
* **Overlapping events**: when two events A and B overlaps it means that they share a time interval. More formally, when A starts before the start of B and A ends after the end of B, A overlaps with B.
* **System**: the whole software system to be developed, comprehensive of all its parts and modules.

## Acronyms

* **RASD**: Requirements Analysis and Speciﬁcation Document (this document).
* **API**: Application Programming Interface.
* **UI**: User Interface.
* **DB**: Data Base.

## Abbreviations

* **[Gn]**: nth goal.
* **[Dn]**: nth domain assumption.
* **[Rn]**: nth functional requirement.

## Reference Documents

• This document refers to the specification document: Mandatory Project Assignments.pdf - Assignements AA 2017-2018

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## Document Structure

This document is structured in four parts:

**Chapter 1**: *Introduction*. It provides an overall description of the system scope and purpose, together with some information on this document.

**Chapter 2**: *Overall description*. Provides a broad perspective over the principal system features, constraints, and assumptions about the users and the environment.

**Chapter 3**: *Speciﬁc requirements*. Goes into detail about functional and nonfunctional requirements. This chapter is arranged by feature.

**Chapter 4**: *Formal Analysis using Alloy.*

# ARCHITECTURAL DESIGN

## Overview

## Component View

## Deployment View

## RuntimeView

### **Component Interfaces**

## Selected Architectural Styles and Patterns

## Other Design Decision

# ALGORITHM DESIGN

# USER INTERFACE DESIGN

# Requirments Traceability

# IMPLEMENTATION, INTEGRATION AND TEST PLAN

# EFFORT SPENT

Agostini Andrea: Introduction: 1h

Overall description: 8h

Specification requirements: 10h

Alloy: 4h

Overall Design: 4h

Ciampiconi Lorenzo: Introduction: 2h

Overall description: 5h

Specification requirements: 10h

Alloy: 10h

Overall Design: 4h

Es-skidri Rachid: Introduction: 1h

Overall description: 5h

Specification requirements: 10h

Alloy: 2h

Overall Design: 10h

# REFERENCES

[1] Google, Android Developers - Design https://developer.android. com/design/index.html

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[3] Software Engineering 2 Project, AA 2017/2018 - Assignments 1 and 2

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[6] Software Abstractions (Logic, Language and Analysis) – Daniel Jackson

[7] Il linguaggio Alloy nella specifica formale di modelli UML – Tiziano Verone