

Luca Scannapieco - 877145

Andrea Pasquali - 808733

Emanuele Torelli - 876210

11/12/2016

PowerEnJoy

Design Document

Table of contents

[1. Introduction 3](#_Toc468215116)

[1.1. Purpose 3](#_Toc468215117)

[1.2. Scope 3](#_Toc468215118)

[1.3. Definitions, acronyms, abbreviations 3](#_Toc468215119)

[1.4. Reference documents 3](#_Toc468215120)

[1.5. Document structure 3](#_Toc468215121)

[2. Architectural design 3](#_Toc468215122)

[2.1. Overview 3](#_Toc468215123)

[2.2. Component view 3](#_Toc468215124)

[2.3. Deployment view 3](#_Toc468215125)

[2.4. Runtime view 3](#_Toc468215126)

[2.5. Component interfaces 3](#_Toc468215127)

[2.6. Selected architectural styles and patterns 3](#_Toc468215128)

[2.7. Other design decisions 3](#_Toc468215129)

[3. Algorithm design 4](#_Toc468215130)

[4. User interface design 4](#_Toc468215131)

[5. Requirements traceability 4](#_Toc468215132)

[6. Effort spent 4](#_Toc468215133)

[7. References 4](#_Toc468215134)

# 1. Introduction

## 1.1. Purpose

## 1.2. Scope

## 1.3. Definitions, acronyms, abbreviations

## 1.4. Reference documents

## 1.5. Document structure

# 2. Architectural design

## 2.1. Overview

The PowerEnJoy service is implemented as a common client-server application, in which the offered services are essentially three:

* User interface services
* Application services
* Storage services

Each of these logic services is placed in the corresponding physic layer, the result is that we adopted a three-tier architecture.

The user interface has two different implementations, one is constituted by a web app that can be run on a modern browser, and the other one is the PowerEnJoy mobile application.

The high-level components architecture is composed of five different elements. The main element is the central. The client interacts with the central in a synchronous way (e.g. the operation of login, request a reservation, unlock a car…), so he has to wait for the central’s response. The client starts the communication with the central by using a web browser or the mobile application.

Furthermore, during a ride, there is another component to which the central communicates: the screen of the car.

## 2.2. Component view

## 2.3. Deployment view

## 2.4. Runtime view

## 2.5. Component interfaces

## 2.6. Selected architectural styles and patterns

## 2.7. Other design decisions

# 3. Algorithm design

# 4. User interface design

# 5. Requirements traceability

# 6. Effort spent

# 7. References