

Integration Test Plan Document

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1 Introduction

1.1 Purpose

[New purpose]

1.2 Scope

PowerEnJoy is a digital management system for car sharing that exclusively employs electric cars to provide its service. The system provides all the functionalities normally provided by a car sharing service: registering to the service, find the location of nearby available cars, reserve cars up to a short amount of time, unlock the chosen car once found, ride it and then park it in a safe area, when it will be automatically locked and the fee paid.

In addition, the system gives bonuses and penalties in term of discounts or over-prices depending on the behavior of the user, in order to promote virtuous behaviors.

PowerEnJoy is therefore a inherently distributed system, based on a central server interactions with many distributed nodes. All these components will be examined in more detail in the subsequent sections of the document.

1.3 Definitions, Acronyms, Abbreviations

RASD Requirements and Specification Document.

DD Design Document.

User A customer of PowerEnJoy using the service.

Staff Operator (Operator) An employee of PowerEnJoy which takes care of the cars.

Ride The action of getting onboard of a PowerEnJoy car, start its engine, drive to destination and park.

Issue Any problem a car may incur in, or a user may face while using the service.

Nearby Cars Available cars located within a maximum distance to a specific position.

Available Cars Cars whose Availability Status is set to "Available".

Nearby Issues Issues that are affecting cars close to a specific position.

Booking (Reservation) The act to reserve a car for a limited amount of time for future use by a user.

Driver Whoever is driving a regularly booked PowerEnJoy car.

Driving License The state's issued driving license of the user.

Notification A form of communication where the user is actively notified of some event.

Issue Report An incoming notification that states a car incurred in an issue.

Fine A fine issued by the local law enforcing officers to a user while driving a PowerEnjoy car.

Pending Bills Bills that an user still need to pay to PowerEnjoy .

Safe Area An parking area, predefined by the company, where is possible to safely park the cars of the PowerEnjoy fleet.

Battery Charge The amount of charge that is kept inside the car's battery.

Charging Station (Power Station) Dedicated areas where is possible to plug the PowerEnjoy cars to charge their batteries.

Car's Onboard System The controll system of the car that is able to exchange data with the central system and to relevelate operation parameters.

Customer's App An implementation of the system frontend tailored to the need of the customers.

Staff's App An implementation of the system frontend tailored to the need of the staff.

Central System (Main Server) The central system for PowerEnjoy . All the command and all the data are streamed, analyzed and used here.

GPS : Global Positioning System is a global navigation satellite system (GNSS) that provides location and time information in all weather conditions, anywhere on or near the Earth where there is an unobstructed line of sight to four or more GPS satellites.

Location Pair of integer values as provided by GPS sensors.

Payment Method Set of data relative to a credit card.

Email address (Email) Unique string identifying an email box to which email messages are delivered.

Identity ID Personal code provided by local authorities to uniquely identify citizens.

Driving License ID The unique code reported on every legal driving license.

Session Key A string representing a key for a secured channel. Used to secure communications between the server and the nodes.

Scanned License An high quality image of the driving license acquired by the car's onboard system.

1.4 Reference Documents

- *Assignments AA 2016-2017.pdf* (Assignments document given by the teacher)
- *Requiurements And Specification Document* (referring to this project)
- *Design Document* (referring to this project)

2 Integration Strategy

2.1 Entry c riteria

[cose da fare prima di iniziare l'integrazione]

2.2 Elements to be integrated

[??]

2.3 Integration testing strategy

[Descrizione della strategia a grandi linee]

2.4 Sequence of components integration

[Effettivo svolgimento dell'integrazione]

3 Individual Steps and Tests Description

4 Tools and Test Equipment Required

5 Program Stubs and Test Data Required

6 Conclusions

6.1 Tools used

During the development of this document we used the following tools:

- **Github** to version control the project
- **L^AT_EX** on TeXworks to redact this document

6.2 Hours of work