POLITECNICO
MILANO 1863

Design Document

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1 Introduction

1.1 Purpose

This document represents the continuation of the RASD document for the PowerEnjoy application previosly presented. Through the discussion we will explain in depth the architecture of the the system to be deployed, then we will focus on components, algorithms developed to implement the described architecture and user interface.

1.2 Scope

The system must provide the following macro functionalities, which can be mapped from the goals presented in the RASD document. In particular:

- **[User functionalities]** PowerEnjoy will make available for the users the full set of functionalities described in the RASD.
- **Operator functionalities** PowerEnjoy will make available for the operators the full set of functionalities described in the RASD.
- **Sensors management functionalities** PowerEnjoy will manage the full set of sensors installed on the cars, processing the signals and storing the data in the database.

1.3 Definitions, acronyms, abbreviations

1.3.1 Definitions

Eh qui c'è da inventarsi qualcosa nel caso, ci pensiamo man mano che scriviamo il documento

1.3.2 Acronyms

Here we include a list of recurrent acronyms:

- **FR:** functional requirements
- **NFR:** non-functional requirements
- **G:** goal
- **JEE:** Java Enterprise Edition
- **AS:** application server
- **EJB:** Enterprise Java Bean
- **JB:** Java Bean

1.4 Reference documents

1. **Analysis document:**
2. **IEEE Standard for Information Technology - Systems Design - Software Design Descriptions:**

1.5 Document structure

This document is organized in a way that is efficient for showing all the possible design issues related to PowerEnjoy. In particular, we will go through:

- **Architectural design:** the blueprint of the system to be deployed, both from hardware and from software point of view
- **Algorithm design:** pseudo-code presentation of the most representative algorithms we would use for the eventual development of the project
- **User interface design:** starting from the mockups presented in the RASD, we refine what was already introduced concerning the user interface design
- **Requirements traceability:** the accurate mapping of the requirements highlighted in the RASD to the design elements presented through this document

2 Architectural design

2.1 Overview

2.2 Component view

2.3 Deployment view

2.4 Runtime view

2.5 Component interfaces

2.6 Architerctural styles and patterns

2.7 Other design decisions

3 Algorithm design

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