

DD

Design Document

Data4Help, AutomatedSOS and Track4Run

Irene Nizzoli, Isabella Piacentini, Elio Salvini

10483798 10508831 10490058

POLITECNICO DI MILANO

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# Introduction

## Purpose

The purpose of this document is to give a more detailed description of the architecture of Data4Help system. It will include the illustration of specific components and design choices that will guide the developers during implementation, integration and testing.

Overall this document outlines these elements:

* The high-level architecture
* The main components and their respective interfaces
* The runtime behaviour
* The design patterns
* The algorithm design of the most critical parts of the application
* Implementation plan
* Integration plan
* Testing plan

## Scope

The aim of TrackMe is to provide a service to either companies in need of data for business researches or individuals for more personal reasons. The main functions of Data4Help are managing requests from different users and saving and protecting a great quantity of data. A registration will be needed to provide clients a personalized experience, both by giving them the results of their requests and by showing monitored user their private health status data. The project is extended by AutomatedSOS that monitors the data of subscribed users and contacts medical services in case of need. The target of this system are elderly people who lives alone or are simply worried about their health conditions. This will need a 24/7 reliability of the application. Finally, Track4Run allows run organizers to create new races, tracks runners and show their position on the map to all possible spectators.

## 1.3 Acronyms, Abbreviations

### 1.3.1 Acronyms

* RASD: Requirement Analysis and Specification Document
* API: Application Programming Interface
* GPS: Global Positioning System
* DAD: Data Acquisition Device
* CF: “Codice Fiscale”
* SSN: Social Security Number
* DD: Design Document
* MVC: Model View Controller
* GUI: Graphical User Interface
* DB: Database
* DBMS: Database Management System

### 1.3.2 Abbreviations

* [Gn]: nth goal
* [Rn]: nth functional requirement

## 1.4 Document Structure

1. **Introduction:** this chapter contains the purpose and the scope of the design document. There’s also a list of the acronyms and the abbreviation that will be used in the document in order to make it more comprehensible.
2. **Architectural Design:** this sectiongives a general idea of the architecture including the three most important views: component, deployment and runtime. The interaction of the component interfaces and some architectural styles and patterns are also contained here.
3. **User Interface Design:** this chapter presents a reference to the mock-ups previously presented in the RASD document.
4. **Requirements traceability:** clarifies how the requirements that have been defined in the RASD map to the design elements that are defined in this document.
5. **Implementation, integration and test plan:** reveal the order in which it is intended to implement the subcomponents of the system and the order in which it is planned to integrate such subcomponents and test the integration.
6. **Effort spent:** shows the number of hours each member of the group spent for every chapter of the document.
7. **References:** presents the external documents used in the construction of the DD document.