**Purpose**

The purpose of this document is to provide a detailed description of the TrackMe system. This will be done by a detailed presentation of the proposed solution and its purpose, listing its goals, and the requirements and assumptions through which they will be achieved. The document is meant to be used by users such as some individuals, elderly people and runners; and also by the third parties.

The TrackMe system is designed as a software application used for monitoring location and health status of individuals. TrackMe supports three different servises such as Data4Help, AutomatedSOS and Track4Run.

In Data4Help, when the user register to the system, the system takes personal information of individuals for instances name, surname, SSN, e-mail, phone number, address, gender, birth date, chronic disease that have and nationality. In addition, the user's location and pulse is taken with the help of sensors on the smart device. These data are stored in a database and shared with third parties if requested by them within the permission of users, such as a hospital. On the other hand, this system supports access to anonymized data of groups of individuals when the identity of individuals should not be identified by these third parties. At the same time, the user will be able to follow own data via the application and to approve or reject the third parties that want to use own data.

AutomatesSOS, the second service offered by TrackMe, is more engaging to elderly people. The data of users registered to AutomatesSOS are tracked real-time. The values, such as pulse meter, accelerometer, gyroscope and barometer, related to the health data of the user are taken every second and controlled by thresholds. When the health data of these people fall below a certain threshold, the health status and location of the users are transmitted to the nearest hospital. An ambulance is sent to the user by providing the necessary service by the hospital. After the SOS notification is sent, the users’ health status, location, notification time and which third party is shared with this information keep in TrackMe's cloud.

Another service is Track4Run supports to organizers arrange a run and define a path for run. Organizers create the running date and location on TrackMe. Runners register with the unique code of organization and track own path and position in real-time. The instant positions of the runners are shown to the organizers and spectators on the map. Moreover, organizer is informed of how many people are following the run.

**Goals**

We thought about the possible customers, Data4Help, AutomatedSOS, Track4Run what they should provide them, so we planned to give our system these features:

**Data4Help:**

For Individuals:

* [G1] Allows to receive and share the data allowed by user specified below. In addition, the last six months of this data are sent to the third parties sending the request. These data are:
  + name
  + surname
  + SSN
  + e-mail
  + phone number
  + address
  + gender
  + birth date
  + chronic disease
  + nationality
* [G2] Allows to collect and store the data of the individuals who are registered and confirms the data transfer.
* [G3] Allow individuals to accept or reject data acquisition with a given third party.
* [G4] Allow individuals to update their personal information they have used while registering and delete their own account.
* [G5] Allows to user can see and select which information is shared with which third parties, when user information is shared.
* [G6] Allows to users to see and follow their own data.

For Third parties:

* [G7] Allows to reach to third parties registered data of specific users’.
* [G8] Allows to access to third parties anonymized data.
* [G9] Allows to perform to third parties the type of data acquisition that they have requested.

**AutomatedSOS:**

* [G1] Allows users registered with AutomatedSOS to control and track their data in real-time.
* [G2] Allows the transmission of health values and location of users to the required third party when health values fall below a certain threshold (The thresholds determined by third parties).
* [G3] Allows the retention of the user's SOS history.

**Track4Run:**

* [G1] Allows organizers to arrange runing and specify paths for this running.
* [G2] Allows runners to log in and register with unique code of organization;
* allows users to track the path and their location on the map in real-time during the running
* [G3] Allows to be shown organizers and spactators, runners' instant locations on a map
* [G4] Allows the organizer to be notified of how many people are following the run through TrackMe.

**Definitions, Acronyms, Abbreviations**

**Definitions**

* TrackMe: is an application which serves to third parties to monitor the location and health status of individuals.
* Data4help: is a service to access to the data of some specific individuals and to access to anonymized data of groups of individuals to the third parties.
* AutomatedSOS: is a service which provides monitor the health status of the subscribed customers and controls some parameters by comparing with a certain threshold.
* Track4Run: is a service for organizers to define the path for the run, for participants to enroll to the run, and for spectators to see on a map the position of all runners during the run.
* Customer: the person who wants to benefit from the service. The person should insert the following information:

1. Name
2. Surname
3. SSN or Fiscal Code
4. Password
5. Phone Number

* Organizer: is a person who arrange runs and define paths
* Smart device: the device that should be present on the user for the necessary measurements. This device must be connected to the internet while on the user.
* Smart phone: the electronic device that contains our application that must be kept in connection with the smart device.
* Bluetooth (Wi-Fi): The person's smart device is connected to a smartphone via bluetooth.
* Runner: An active participant who join the run, athlete.
* Ambulance: The vehicle to be sent by the hospital to the person's location when the measured values fall below a certain threshold.
* Hospital: An institution or a third party in which persons agree to share their information and health status. It is also obliged to send an ambulance to the position of individuals when necessary.
* Active: The status of hospitals when they serve.
* Deactive: The status of hospitals when they do not serve.
* Sensors

1. Pulse meter: A sensor that takes the pulse accurately.
2. Accelerometer: A sensor in mobile phones are used to detect the orientation of the phone.
3. Gyroscope: A sensor that adds an additional dimension to the information supplied by the accelerometer by tracking rotation or twist.
4. Barometer: A sensor is used in meteorology to measure atmospheric pressure and forecast short term changes in the weather. Atmospheric pressure also varies with elevation, a barometer can also be used as a basic altimeter.
5. GPS: A sensor that ensures that the person's position is correctly received.