**HARDWARE INTERFACES**

This system is inteded to stay with the user during his every day life. In order to guarantee the promised services, it’s necessary that users install the-front end application on a smartphone (Android or iOS) that can use GPS services to allow localization and supports bluetooth in order to connect the device worn by the user to retrieve health data. This device can be a smartwatch or any other hardware able to get the interested health parameters.

Since the application must run over the internet, the smartphone is required to connect through WIFI or a wireless mobile telecommunications technology.

**SOFTWARE INTERFACES**

The application software don’t need to lean on other softwares in order to provide basic services, except for front-end application that must run on a operating system able to connect external devices like smartwatches.

Meanwhile the service Track4Run require to interact with a software that provides a map service which include these functionalities:

* visualize a map on which a path that cross different points can be shown;
* draw in detail this path on the map;
* provide metrics and statistics about a point moving on the map.

**COMMUNICATION INTERFACES:**

The system is essentially splitted between a front-end and a back-end that need to communicate over the internet network.

Furthermore a Bluetooth connection between smartphones and external devices is required.

**2.2. Product functions**

Summing up the goal of the application, the functions that TrackMe offers are the following:

1. Monitor an individual

This function permits a third party (an association, an hospital, a company, etc) to ask for the data of a single user. More in detail, the third party can select a user by his/her SSN and send him/her a request to be allowed to access his/her data. If the user accepts it, then the third party will receive his/her data. The third party can request to keep monitoring the individual also after the request and it will receive the data as soon as they are ready. The user can decide to deny the permission at any moment.

1. Anonymous aggregation of individual data

Third party can access anonymized data of a group of users enrolled in TrackMe. After a third party sends this kind of request by specifying some restrictions about users’ attributes, like age and residence, the system will collect the data of the target users, anonymize and send them to the third party if the number of users is greater than 1000 in order to guarantee the anonymity. The third party can request to keep receveing new data of the group after the request and it will receive the data as soon as they are ready until the group size will not be lower than 1000.

1. SOS assistance

The system keeps under control the health status of a user by monitoring the values of the health parameters acquired by external devices (smart watches or similar devices). If at least one of the parameters goes under a fixed threshold, the system generates an SOS within 5 seconds starting from the moment of the evaluation of the dangerous parameter. The SOS communicates to the ambulance the position of the user.

1. Organization running events

The system offers to a third party to organize a running event. The third party must specify the timing, the track and the maximum number of participants for the run.

1. Partecipate or follow running events

The user can select an available run and participate by sending a simple request. Furthermore the system permits a user to track the position of the runners involved in a run. The user can check the list of available runs and, after selecting of among them, he/she can watch the map of the track filled up by points representing the runners in their actual position.