**User Requirement: Google maps API**

**User Requirement definition:**

7. Client would like to like the mobile application to integrate with the google maps API. The application should be able to utilize Google API for the location, destination of the skips.

**System requirement specification**

7.1 When loaded the application should open up scanning the maps, detecting and mapping out the precise location of each skips. This process of scanning should be automatic are a short interval of approximately 5 to 10 seconds.

7.2 The mobile application system through google maps of the smart skips should be able to differentiate the full and empty skips.

7.3 Automatic detection following the shortest path algorithm implemented into the google API to select the full skips destination the to the skip dump.

7.4 The system automatically scanning all types of skips and provides automated details the selected skips.

7.5 Mapping the path of skips destination to the dump to empty the waste or path to the nearest empty skip for replacement.

**Functional requirements**

**Switch result view (switch from different skips)**

**Locating existing account**

**ID: FR21**

**TITLE:** Locating existing account

**DESC:** User should already have detailed stored in the system from their (Government) account and the application should synch user’s access directly.

**RAT:** In order for users account to synch directly from login.

**DEP: FR7**

**ID: FR22**

**TITLE:** Switch result view (switch from different skips)

**DESC:** User should be able to switch to a result view when selecting the skip which as been emptied or needs to be emptied.

**RAT:** User should be able to view skip clearly with more details.

**DEP: FR15**

**ID: FR23**

**TITLE: Skip’s daily record**

**DESC: User should be able to select a skip and see how many times a certain skip has been emptied on that day.**

**RAT: To ensure user keeps track of skips record and not overuse a certain skip.**

**DEP: FR20**

**ID: FR24**

**TITLE:** Automatic refreshing of the google maps

**DESC:** Application map needs to constantly refresh to remain updated which skip is full or empty.

**RAT:** Increase efficiency and usability

**DEP: FR13**

**ID: FR25**

**TITLE:** Time taken to destination

**DESC:** User should be able to view the location and time it will take for skip to be emptied.

**RAT:** Increase efficiency and usability by providing user feedback

**DEP: FR4**

**Non- functional**

**Examples:**

* + **Response time**
    - **Google api response time**
    - **Switching from full to empty**
    - **Time taken to detect shortest path**
  + **Reliability:**
    - **Too many users at one time**
    - **Bug in the code**
    - **Failure in the algorithm**
    - **Missing Interface functions**
    - **Non-responding software**
    - **Slow running asset(phone)**
  + **Storage:**
    - **Devices not having enough run space**
    - **The software requiring a lot of memory**

**ID: NFR16**

**TITLE**: The software requiring a lot of memory to run

**DESC**: The application requires a large amount of memory to be able to run smoothly due to feature such as google map.

**ID: NFR17**

**TITLE**: Failure in detecting the shortest path

**DESC**: The application failing to detect the shortest path could lead to several levels of inefficiency and affecting the user’s time. The algorithm needs to be integrated correctly.

**RAT**: In order to increase user travel efficiency

**ID: NFR18**

**TITLE**: Failing to locate full and empty skips

**DESC**: The system should be able to constantly scan the map and identify which skips are full or empty.

**RAT**: The effectiveness of the application depends on the ability to scan for skips.