

Official Requirements Document

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1.0 Change history

Version	Changes
1	<ul style="list-style-type: none">- Deleted gas station 'owner' as stakeholder because of crowdsourcing- Inserted map system as stakeholder- Removed fuel price system from context diagram- Inserted class diagram (glossary)

2.0 Abstract

EZGas is a very useful service for all driver. In particular, that service shows in a map some possible gas stations in a definite area and for each gas station the relative fuel price. Thanks to this service an user can choices the cheapest gas station or the closest from him/her.

Overall, this is a crowdsourcing service. This means that this service is in constantly evolving thanks to driver reports.

3.0 Summary

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4.0 Stakeholders

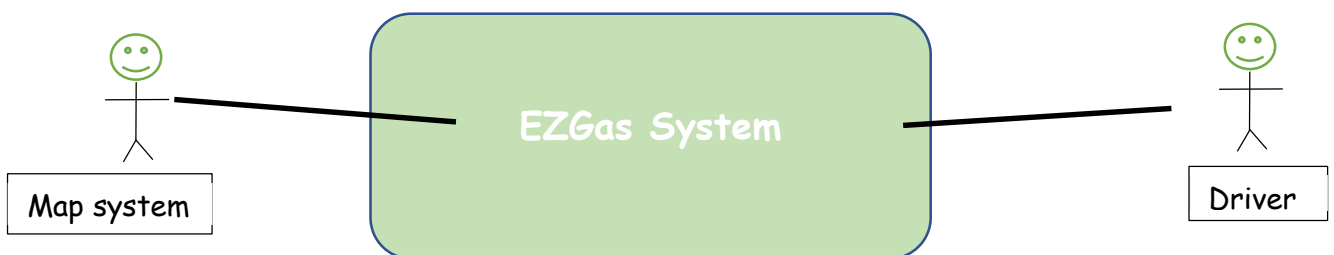
Name	Description
Driver	Uses the application to see the list of gas stations in a map and for each one, the fuel prices. They can also give a report concerning a gas station.
Map system	System used to show a world map where evidence the gas stations.

Table 1: List of stakeholders (People or roles with an interest in using EZGas system)

5.0 Context diagram and interfaces

5.1 Context Diagram

The context diagram allows to understand the entire EZGas system and specifies which are the interfaces to use to interact with the external world.



5.2 Interfaces

Actor	Logical Interface	Physical Interface
Driver	GUI	Screen, keyboard
Map system	API	Internet connection

Table 2: Actors of the context diagram with relative interfaces

6.0 Stories and personas

A persona is someone who typically uses the EZGas system. For each persona, we define a possible life scenario building a story.

Mrs. Jennifer 30, teacher, mother of two children. (registered user)

Jennifer go to work by car. Usually she drives 15 minutes before arriving at school. When she ends up to work, before returning at home, once a week she goes to gas station to buy some fuel because she lives in a little village without any gas station in it. From few days, she is looking for a new gas station near her school because she heard that it's cheaper than the one she usually goes.

Mr. Daniele 25, student in a trip (unregistered user)

Daniele, rented a car to do a trip with her girlfriend. Since he arrived in Pisa, he's searching for a "methane" gas station for his car. Unfortunately, he doesn't know those streets. Moreover, he finds really stressful search a "methane" gas station in there because all of gas station he found were not able to deliver "methane". In particular, he found three gas station and two of them didn't have "methane" and another one was temporary out of service.

Mr. Owner 52, owner of a gas station

Mr. Owner decided to open a new business. To be more specific, he decided to open a new gas station that contains all possible fuel also electricity for electric car. The problem is that this gas station is not in a good position, so he's searching a solution for advertising it.

7.0 Functional and not functional requirements

7.1 Functional requirements

ID	Description
FR1	Record that a driver reports a new gas station and their relative fuel prices
FR1.1	Find gas station address in map system and mark it in EzGas system
FR1.2	Insert new fuel type and relative price
FR2	Handle that a driver reports changes concerning a gas station
F2.1	Driver reports that gas station is out of service
F2.2	Driver reports a change in fuel price in a relative gas station
FR3	Display all gas stations and the relative fuel price given an initial point and a range area
FR3.1	Calculate target area
FR3.2	Search information about gas stations in target area
FR3.3	Handle to display information to driver
FR4	Authorize and authenticate
FR4.1	Handle Log in driver
FR4.2	Handle Log out driver
FR4.3	Define an account for advanced features

Table 3: Functional requirements that describe the behaviors provided by EZGas

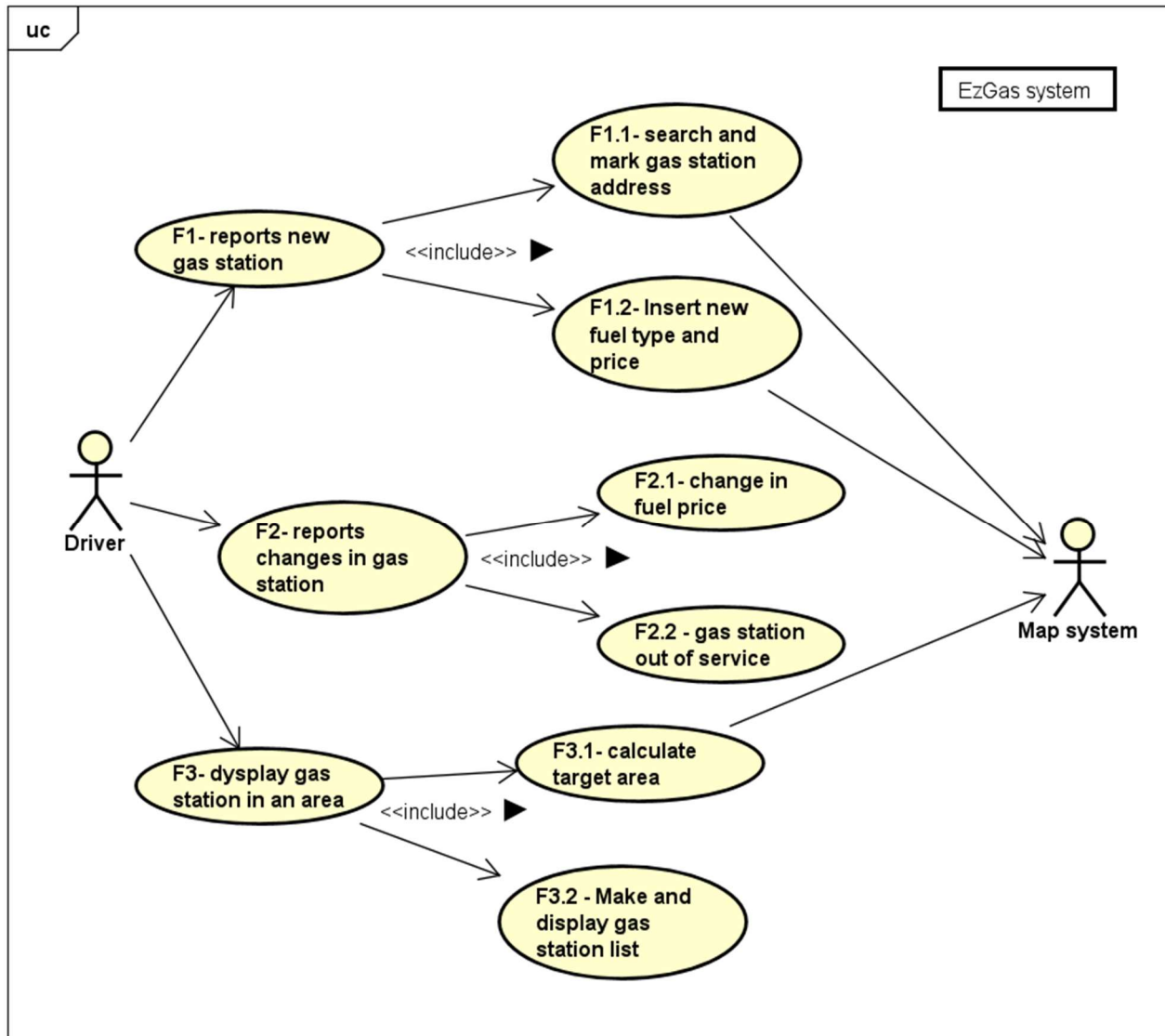
7.2 Not functional requirements

ID	Type	Description	Refers to
NFR1	Usability	Application should be used with no training	ALL FR
NFR2	Efficiency	All functions should be complete in < 0.5 sec.	ALL FR
NFR3	Portability	The application runs on PC (Chrome v80.0, Firefox v74.0) and smartphones (Android v6.0, IOS v6.0)	ALL FR
NFR5	Localization	Decimal number use .(dot) as separator	
NFR6	Localization	Fuel price are in EUR	

Table 4: Not functional requirements that are implicit to make useful the EZGas system

8.0 Scenario, Use case diagram and use cases

8.1 Use case diagram



8.2 Use cases

A Use case is a set of scenarios with common user goal. Use case purpose is to understand how system works.

Actors Involved	Driver
Preconditions	Driver has an account in EZGas system
Postconditions	List_gas_station++
Nominal scenario	A registered driver reports a new gas station with its relative fuel type and prices
Variants	Wrong address;

Table 5: Use case 1, UC1 - FR1 - Driver reports new gas station

Actors Involved	Driver
Preconditions	Driver has an account in EZGas system
Postconditions	updateGasStation(price, error)
Nominal scenario	A registered driver reports a change (in price or some issue) in an existing gas station.
Variants	Gas station not exists in system;

Table 6: Use case 1, UC2 - FR2 - Driver reports changes in existing gas station

Actors Involved	Driver
Preconditions	
Postconditions	Display array of station -> station[i].<fuel; price>;
Nominal scenario	A driver set a target area given (x, y, time). Driver receive the list of gas station in target area; click on one station to see fuel and prices;
Variants	

Table 7: Use case 3, UC3 - F3, F4 - Driver search gas stations in the system

8.3 Relevant Scenarios

Scenario ID: SC1	Corresponds to UC1
Description	A driver reports a gas station not existing in system
Precondition	Driver has an account; address of new gas station exists in map system
Postcondition	New gas station marked in the EZGas system
Step #	Description
1	Launch EZGas application
2	Log in
3	Reports a new gas station
4	Log out

Table 8: Scenario 1, Sequence of events done by a driver to reports new gas station

Scenario ID: SC2	Corresponds to UC2
Description	A Driver signals something concerning a gas station
Precondition	Driver has an account in EZGas
Postcondition	Num_report_stationX++;
Step #	Description
1	Launch EZGas application
2	Log in
3	Insert range area and initial point
4	Click on a gas station to see fuel price and availability
5	Signals something concerning a gas station
6	Log out

Table 9: Scenario 2, Sequence of events to signal something in a gas station

Scenario ID: SC2 **Corresponds to UC2**

Description	A Driver, not necessarily registered in EZGas system, is looking for gas stations' information
Precondition	
Postcondition	
Step #	Description
1	Launch EZGas application
2	Insert range area, current time, and initial point
3	Click on a gas station to see fuel prices and availability

Table 10: Scenario 3, Typical events for visualizing gas station information

9.0 Glossary (Class Diagram)

