Official Requirements Document

Authors: Enrico Alberti

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1.0 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.

2.0 Summary

3.0 Stakeholders

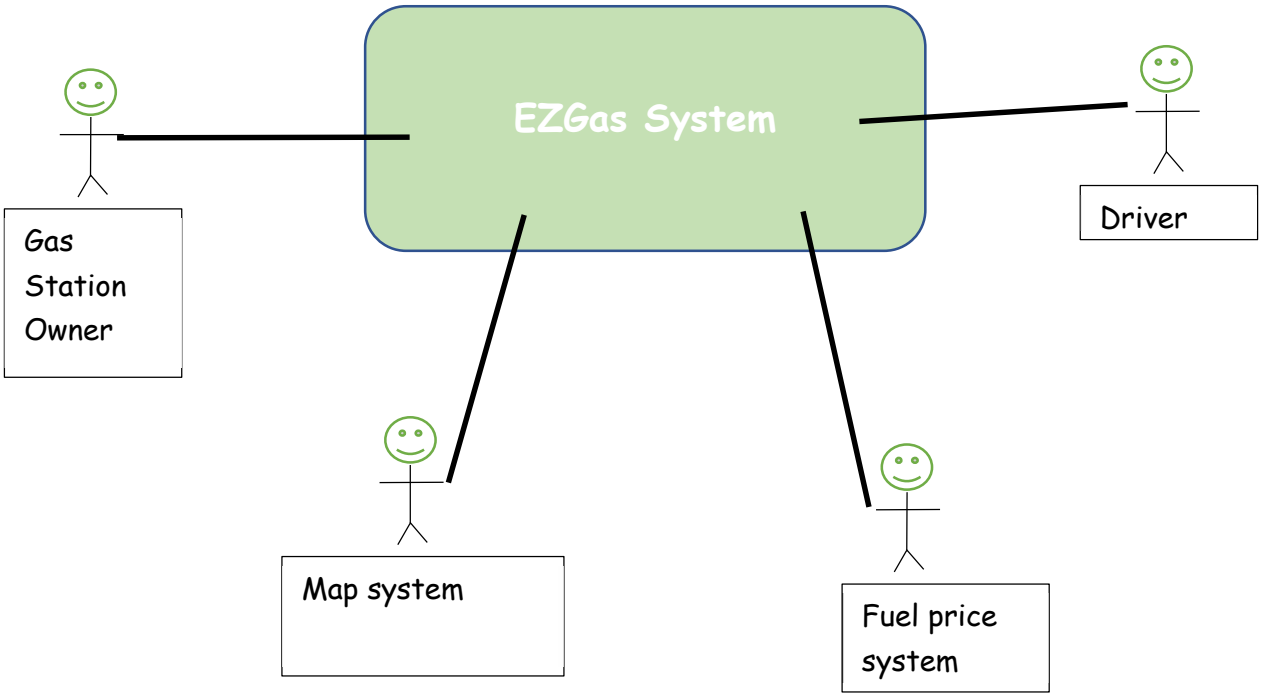
Name	Description
Driver	Uses the application to see the list of gas stations in an area and for each one, the fuel price
Gas station owners	Uses the application to monitor other concurrent (gas stations)

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

4.0 Context diagram and interfaces

4.1 Context Diagram

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



4.2 Interfaces

Actor	Logical Interface	Physical Interface
Driver	GUI	Screen, keyboard
Gas station owner	GUI	Screen, keyboard
Fuel price system	Data exchanged, XML	Internet connection
Map system	API	Internet connection

Table 2: Actor of the context diagram with relative interfaces

5.0 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.

6.0 Functional and not functional requirements

6.1 Functional requirements

ID	Description
FR1	Record that an owner registers his gas station and the relative fuel prices
FR1.1	Find gas station address in map system and insert it in EzGas system
FR1.2	Insert new fuel type and relative price
FR2	Handle that someone signals something concerning a gas station
F2.1	Someone signals that gas station is out of service
F2.2	Someone signals 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	Retrieve gas station name and its fuel prices
FR3.2	Calculate target area
FR3.3	Handle to display information to driver
FR4	Authorize and authenticate
FR4.1	Handle Log in driver and owner
FR4.2	Handle Log out driver and owner
FR4.3	Define an account

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

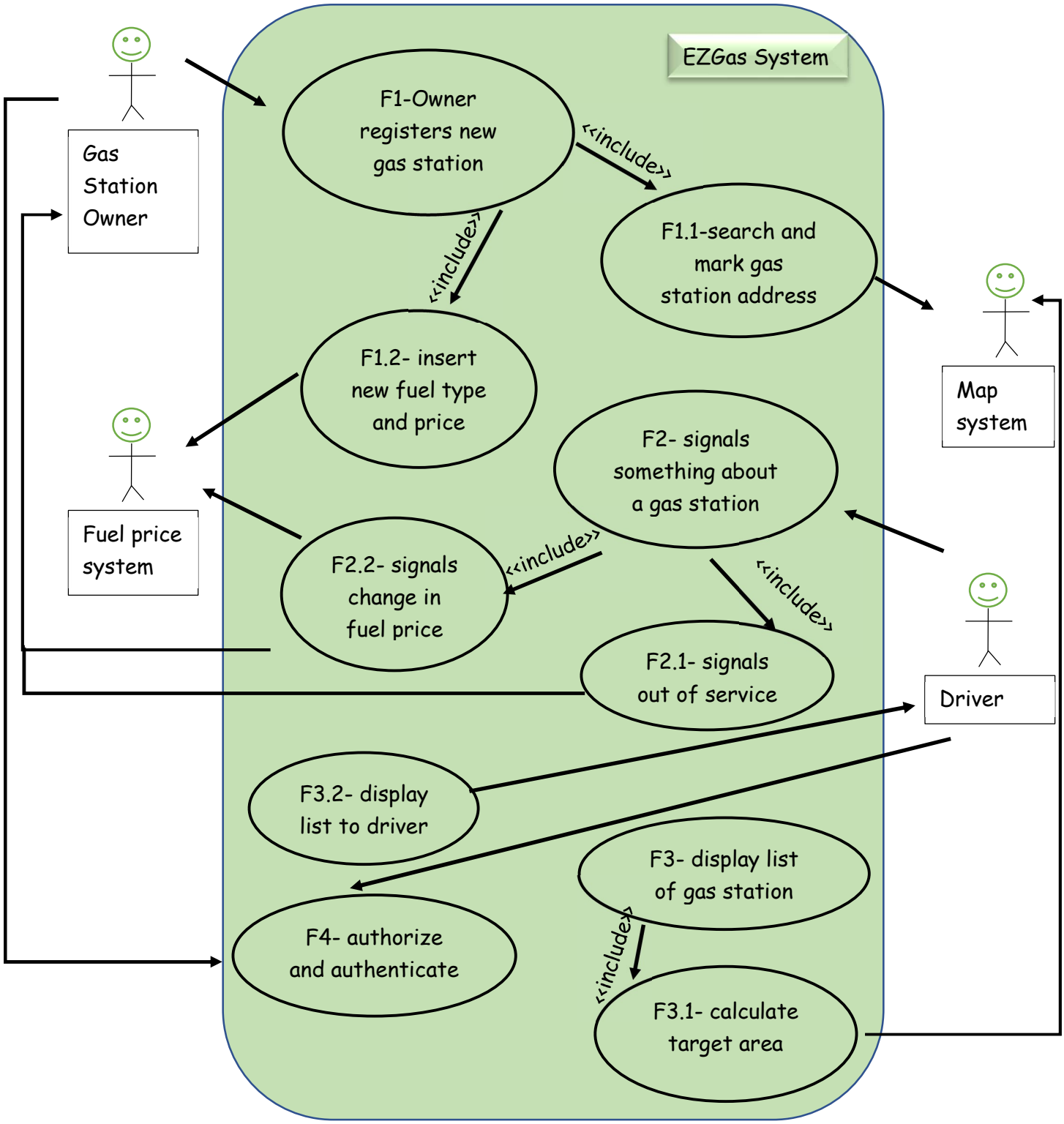
6.2 Not functional requirements

ID	Type	Description	Refers to
NFR1	Usability	Application should be used with no training	ALL FR
NFR2	Efficiency	All function should be complete in < 0.5 sec.	ALL FR
NFR3	Portability	The application runs on PC and smartphone	ALL FR
NFR4	Reliability	The system is down 3h for maintenance once a month	
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

7.0 Scenario, Use case diagram and use cases

7.1 Use case diagram



7.2 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	Gas station owner
Preconditions	Owner exists in EZGas system
Postconditions	List_gas_station++
Nominal scenario	The owner tries to insert its gas station
Variants	Wrong address; owner not registered; insert new fuel type

Table 5: Use case 1, ***UC1*** *– F1 –* ***Owner registers new gas station***

Actors Involved	Driver
Preconditions	Driver exists in EZGas system
Postconditions	<map: fuel-price>; Alert on gas station owner
Nominal scenario	A driver views the list of gas station; click on one to see fuel and prices;
Variants	Signals fuel price changed; signals problems to use gas station

Table 6: Use case 2, ***UC2*** *– F2, F3, F4 –* ***Driver uses a gas station in the system***

7.3 Relevant Scenarios

Scenario ID: SC1	**Corresponds to UC1**
Description	An owner registers his gas station
Precondition	Owner account is registered; address exists
Postcondition	New gas station in the map
Step #	Description
1	Launch EZGas application
2	Log in
3	Insert a new gas station
4	Log out

Table 7: ***Scenario 1, Sequence of events done by a gas station owner***

Scenario ID: SC2	**Corresponds to UC2**
Description	Someone is searching gas stations information
Precondition	Driver has an account in EZGas
Postcondition	Driver knows where is his destination
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	Log out

Table 8: ***Scenario 2,*** *Sequence of* ***typical events to interaction with EZGas system from a driver***

Scenario ID: SC3	**Corresponds to UC2**
Description	A Driver signals something concerning a gas station
Precondition	Driver has an account in EZGas
Postcondition	Alert on gas station owner
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 3,*** *Sequence of* ***events to signal something in a gas station***