Life3R

Circular economy ecosystem to Recover, Recycle and Re-use F-gases contributing to the depletion of greenhouse gases - LIFE 3R

Deliverable: Installer R-Gas management

Action C3

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Abstract

This deliverable focuses on the work package applied by **field installers to manage collected F-Gas** within R-Market. Indeed, they are considered to be part of the supply chain of the recovered refrigerant, including installation and service companies active in primary air conditioning (AC) and refrigeration sector in cooperation with the relevant partner networks. All of them have access to refrigerant through small, medium or large installations and will take advantage by the 3R ECOSYSTEM, achieving the real-time and on-site F-gas recovery via IOT prototypes as well as an extra revenue stream from the sale of F-gas via 3R Marketplace platform. Specifically, the crucial point of deliverable is the story map of submitting new refrigerant data by seller - installer in the 3R database.

Contents

1 Basic scenario

1.1 User Story Map

Any Installer Co. installer who is interested in submitting new refrigerant data to database, should click the choice "Enter new refrigerant" which is available as a button in the Dashboard (installer) and is equivalent to the following message towards 3R ECOSYSTEM: "As an Installer Co. installer I want to manage collected F-Gas within R-Market platform". After that, he /she will be able to access to the following functionality:

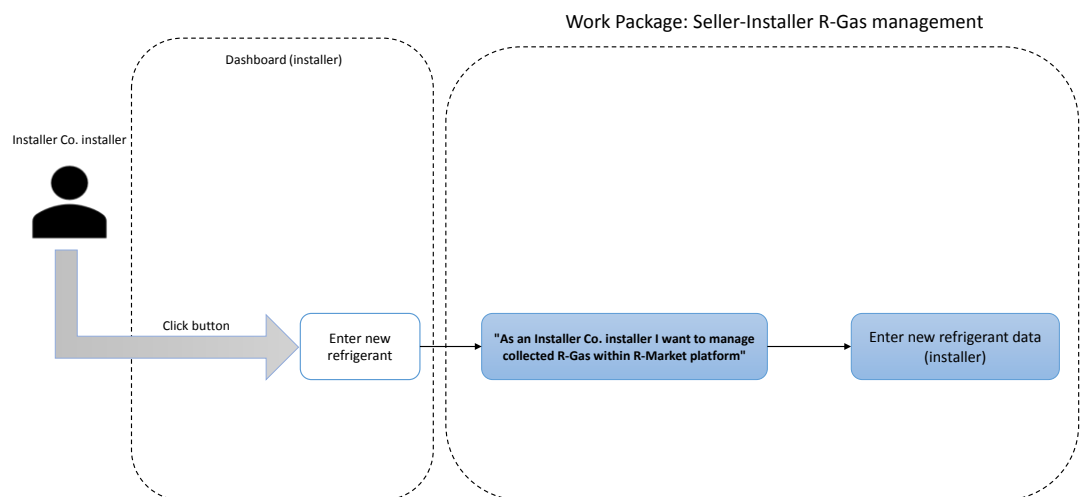- Enter new refrigerant data (installer).

Figure 1: Overview of seller-installer F-Gas management.

1.2 Assumptions

Initially, the installer plays a crucial role in the successful implementation of the R-Market platform since he/she acts as the first data input point. Then, it has been taken into serious consideration that installers being field workers have limited access to desktop computers or laptops and thus their interaction with R-Market platform will be mostly by mobile devices. Typically, either an unwieldy UI or an UI not optimized for mobile devices as well as excessive requirements for manually entered data, they are some of the most common restrictive factors that can make installers to be reluctant to use the R-Market platform. Moreover, since data entry on the platform represents an additional workload, it could be perceived as interference with their daily operations.

Because of all mentioned above, special emphasis is given on the proper optimization of the input process for installers. In this regard, a mobile app has already been developed that also supports a data submission capability. Generally, a sustainable buy-in for installers is expected to be built including special perks that will be beneficial to their daily operations, along with the use of R-Market platform. These perks can come in the form of a digital log book, where all field installers could insert prerequisite and optional additional details per retrieved, analysed and/or classified batch of F-Gas quantity. In addition, a QR code reading/scanning capability is now available for bottles and units, thus enabling automated data entry.

2   Analysis of different user stories

2.1 Enter new refrigerant data

The Installer Co. installer selects the 1st and only functionality available to submit collected F-Gas data to database so that the company administrator can then manage the recently added refrigerant on R-Market platform. A template of user interaction and design for "Enter new refrigerant data (installer)" form is depicted in **Figure 2**. All fields are insensitive to non-English characters and those marked with "*" are also mandatory.
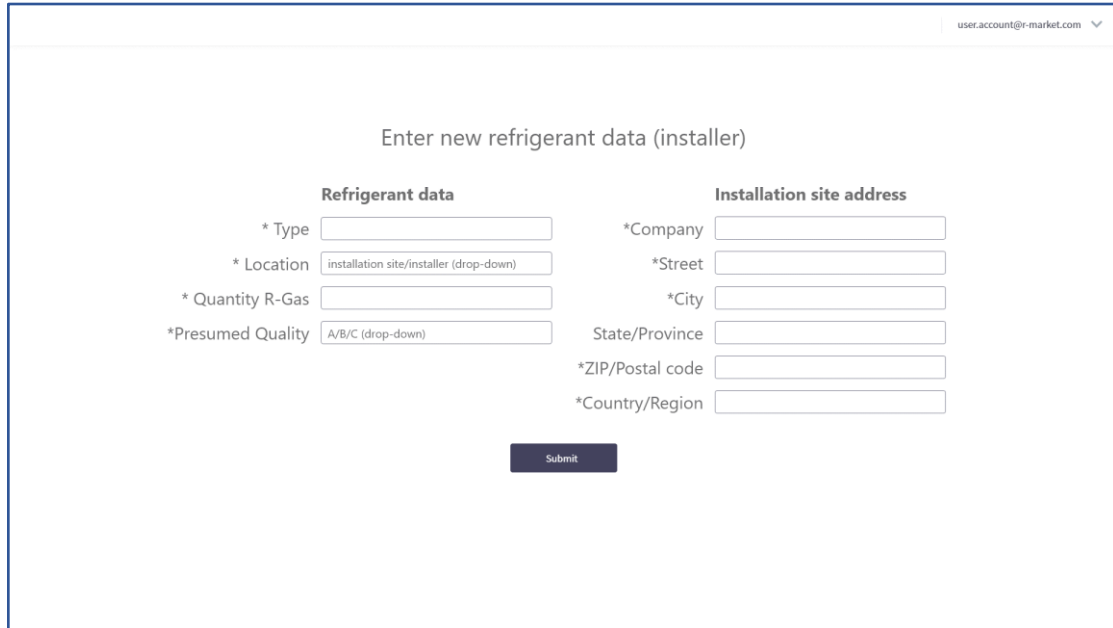
Figure 2: User interaction and design for "Enter new refrigerant data (installer)" form.

Regarding "Location" field, the installer can choose, via a drop-down menu, between two (2) basic options: installation site or installer. In each case, it is the location of the bottles that installer should specify. For example, if the bottles are to be moved from the installation site location, a number of fields will be filled in by the installer under the label "Installer name & surname (in transit)". Instead, the label will change respectively to "Installation site address" if the bottles are left on the installation site location.

Furthermore, installer enters the quantity of F-Gas per each bottle extracted on the installation site in order to fill in the corresponding "Quantity F-Gas" field. A drop-down menu with A/B/C possible options is also available for the "Presumed Quality" field. It is noted that the relevant quality certificates uploaded by sellers (administrators) in R-market platform are per bottle, too.

After the successful submission of a new refrigerant data, the installer automatically returns to the Dashboard (installer) which is, among others, country specific-currency. Given that the recently added F-Gas belongs now to the company stock, it is displayed in the dashboard of both administrator and installer as well as in the stock tab which exists as one of the functionalities included in the Seller-Company R-market.

It should be reminded that company stock is represented by all refrigerants collected no matter what current location is. Hence, there are three (3) possible location options available: company; installer; installation site. However, administrator is the one who can change the location of an item recorded on the market-stock tab. Typically, he /she modifies the location status from "installer" to "company" when a refrigerant has been delivered to company by installer.

3 Future work

Overall, the work package has made a very good progress. A unique critical aspect to be investigated, it is the need to possibly include control to change location status from company back to installer or installation site in case that installer wishes to take back refrigerant from the company. This can be justified by the fact that currently (in Ver. 1.0), the seller cannot change location back to installer or installation site once the refrigerant has come to company stock. For future versions, it should also be examined if more location options have to be available (i.e., testing facility).