

# Gees Recycling metodologija transformacije odpadkov in sistem sledenja CFR izdelkom v sklopu Industrije 4.0

# Retracking web platform process

## Waste recycling management

### Disposal

Disposal request with analysis

Offer -> Order confirmation -> Shipment



### New Product










Put on the market new product based on FRC with RFID Chip for tracking

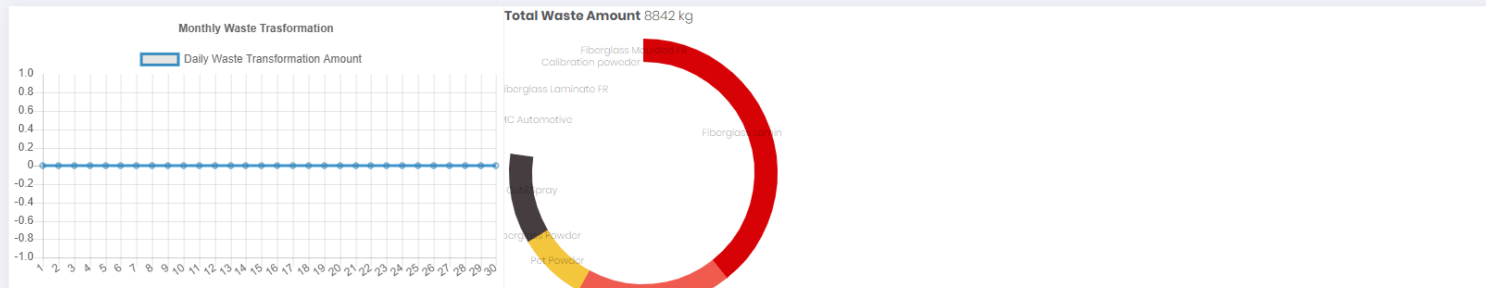
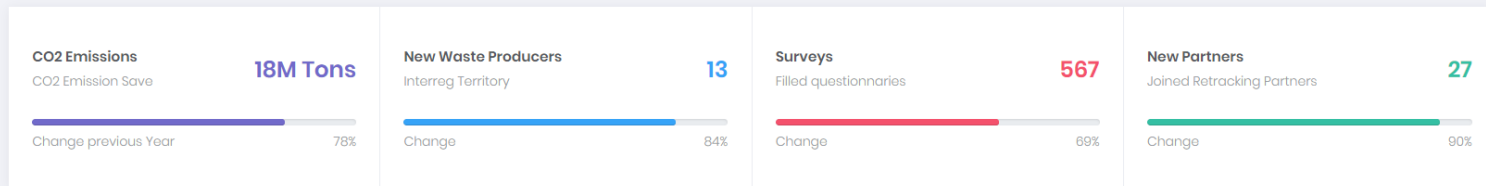
### Recycling process

Waste enrollment at recycling point  
Shredding -> Second raw material  
Panel creation with RFID Chip inside

# Web Platform Retracking

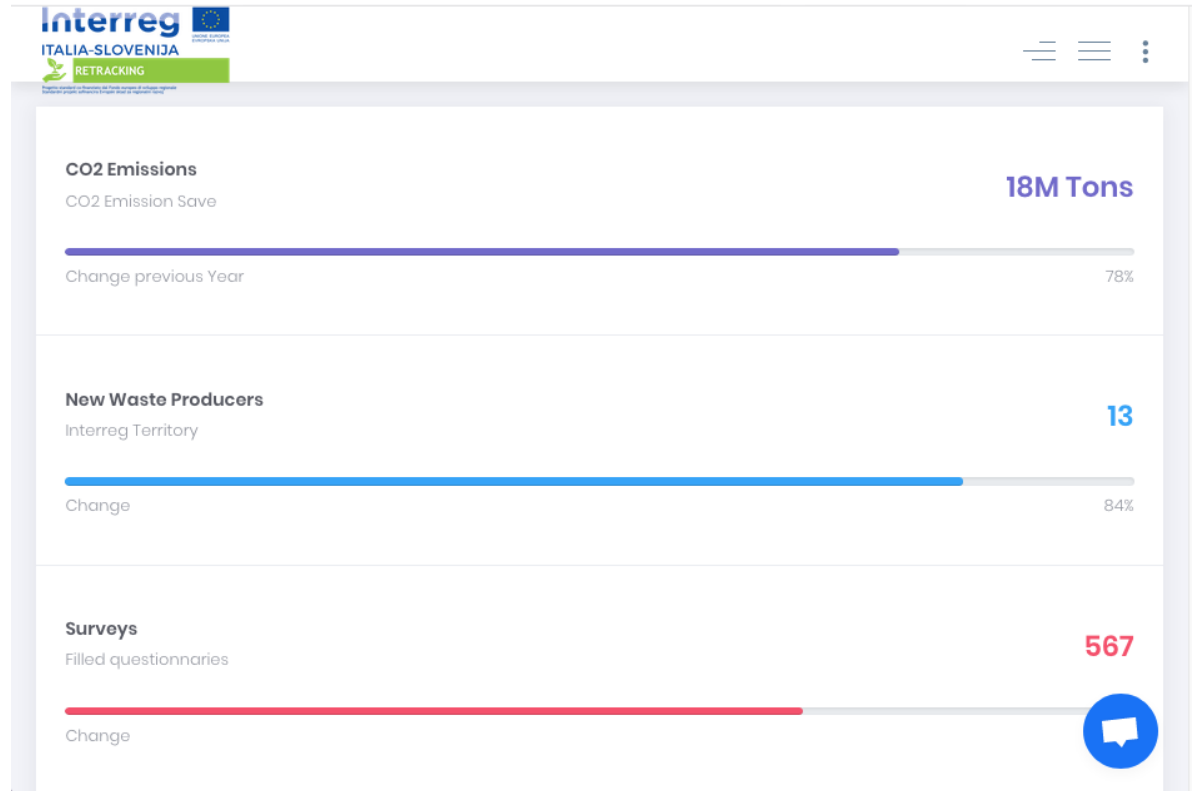


-  Dashboard
-  Questionari >
-  Trasformazione rifiuti >
-  Recycling Process >
-  Registro produzione >
-  Configurazione >
-  Impostazioni >
-  Opzioni menu >
-  Ruoli >





On the home screen a **dashboard** is displayed with various informations – how many waste is recycled, how many Co2 was saved etc. All data that are displayed are received in **real time**

This data can be used for ISO14000 and other certification systems



Example data

## Waste collection request


  
**ITALIA-SLOVENIJA**
  


Trasformazioni

Trasformazioni + Crea

Visualizza 1-1 di 1 elemento.

Numero trasformazione	Data richiesta	Nome azienda richiedente	Nome contatto richiedente	Nome mittente	Stato	Offerta no*	Ordine no*	Spedizione no*
DI-5bff7a5c81b6	2019-03-08 05:00:07	Retracking		Retracking	Vci a Offerta Ordine in attesa Spedizione in attesa Iscrizione in attesa	OF-66c9e3f68343		

Dashboard
   
 Trasformazione rifiuti
   
 Registro produzione
   
 Impostazioni
   
 Opzioni menu

18M Tons
   
 78%
   
 13
   
 84%
   
 567

User must fill the form with all the required data. This process is needed to identify the type and all aspects of the waste

Aggiungi nuovo rifiuto

**Descrizione \***

Poliuretano espanso rigido

**Quantità [Kg]**

4500

**Tipo componente**

PU Rigid Powder

**Tipologia rifiuti \***

12 01 05 Plastics shavings and turnings

**Larghezza rifiuti**

0-9cm

**Altezza rifiuti**

0-9cm

**Spessore rifiuti**

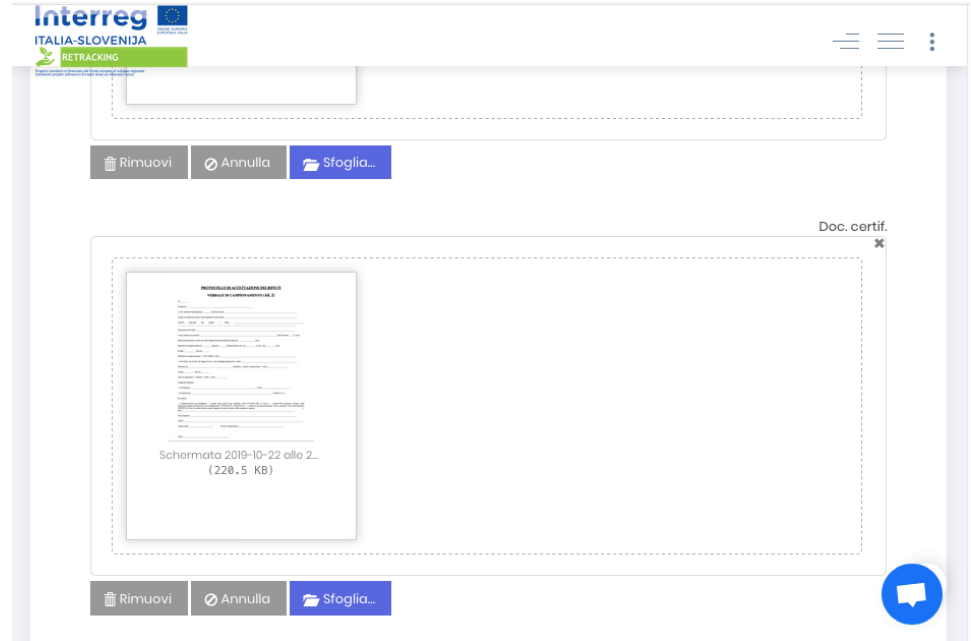
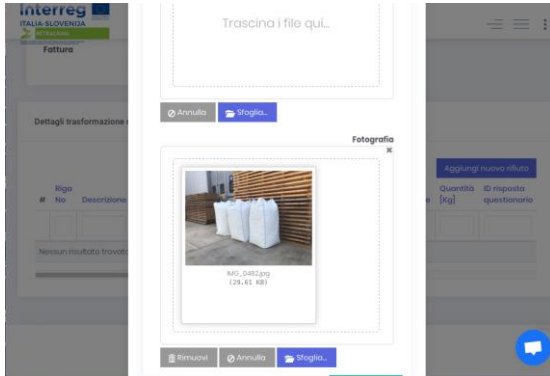
0-2mm

Aggiungi nuovo rifiuto


Quantità [Kg] ID risposta questionario

Nessun risultato trovato

It's possible to add  
**documentation** for example  
 analysis certificates ( compulsory  
 in Italy )  
 Or **photos** to better identify the  
 waste



## Waste transformation - Offer management

**Interreg**   
ITALIA-SLOVENIJA  
**RETRACKING**

- Dashboard
- Surveys
- Waste Disposal
- Recycling Process
- Production Log
- Configuration
- Settings
- Menu Options
- Roles

Actions



Offer n° OF-ac911c37b106

Requester Waste Disposer --

Number OF-ac911c37b106

Disposal ID 30

Offer Date 22/10/2019 02:00:00

Save and Close Save

Close without saving

Details

Disposal Disposal n° DF-c5e0e645c08d 

Order Order not found 

Shipment Shipment not found 

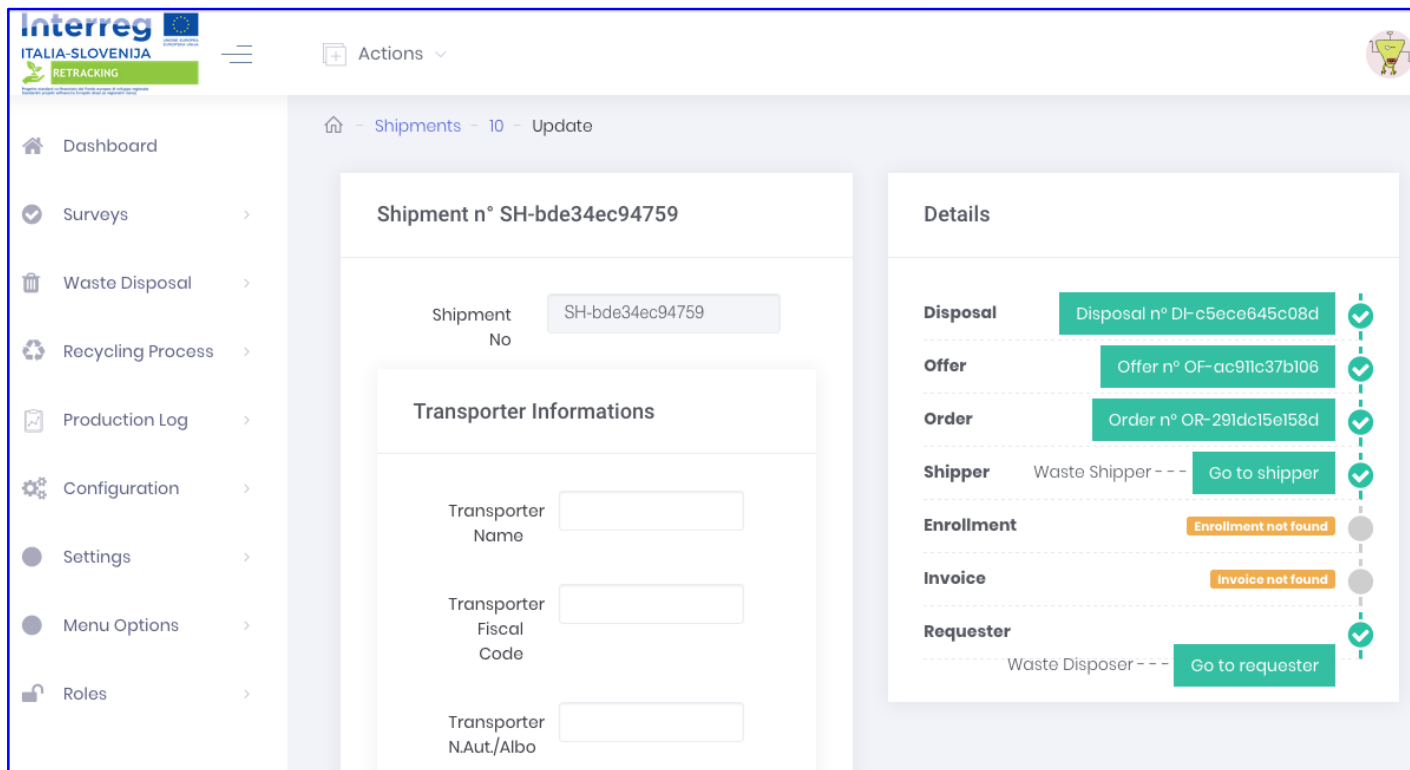
Enrollment Enrollment not found 

Invoice Invoice not found 

Requester Waste Disposer --  [Go to requester](#)



## Shipment process tracking and management



The screenshot displays a web application interface for managing shipments. The top navigation bar includes the Interreg Italia-Slovenija logo, a menu icon, an 'Actions' dropdown, and a trash icon. The main content area is titled 'Shipments - 10 - Update' and features a breadcrumb trail.

The central focus is on a specific shipment, identified as 'Shipment n° SH-bde34ec94759'. Below this title, the shipment ID 'SH-bde34ec94759' is displayed in a light grey box, with the label 'Shipment No' positioned to its left.

A section titled 'Transporter Informations' contains three input fields for the transporter's details:

- Transporter Name
- Transporter Fiscal Code
- Transporter N.Aut./Albo

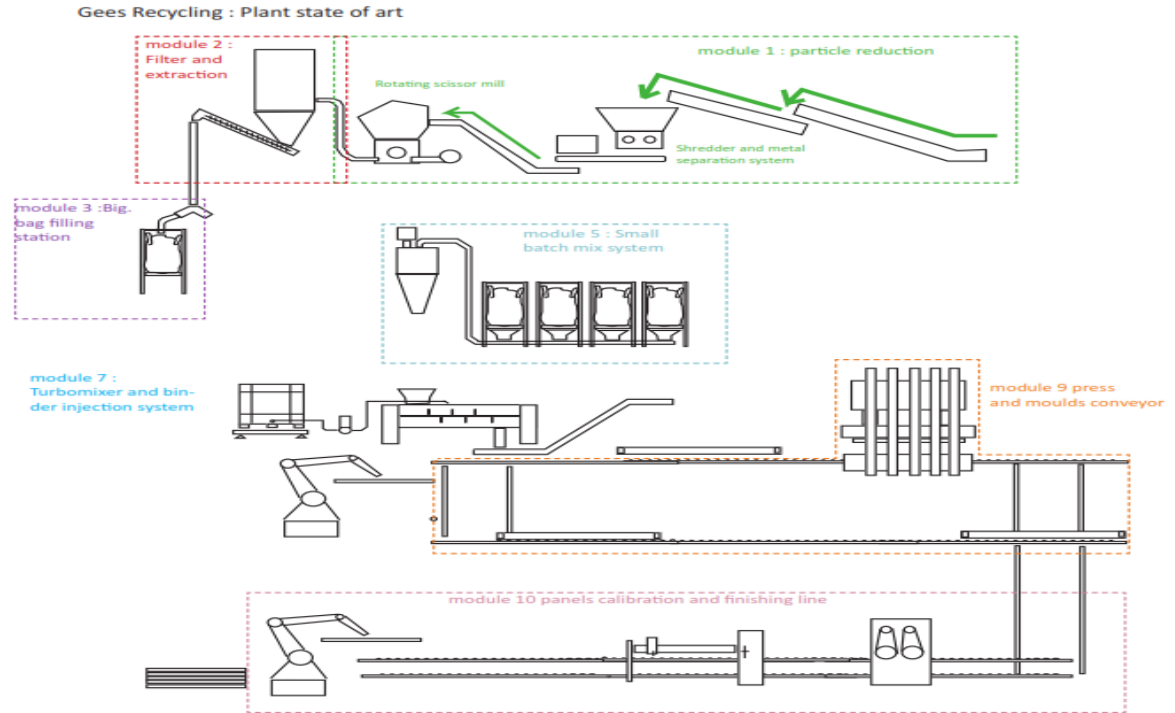
On the right side, a 'Details' panel provides a vertical timeline of the shipment process. Each step is accompanied by a status indicator (a green checkmark for completion or a grey circle for missing information) and a corresponding button:

- Disposal:** Disposal n° DI-c5e0ce645c08d (Completed) with a 'Go to disposal' button.
- Offer:** Offer n° OF-ac911c37b106 (Completed) with a 'Go to offer' button.
- Order:** Order n° OR-291dc15e158d (Completed) with a 'Go to order' button.
- Shipper:** Waste Shipper --- (Completed) with a 'Go to shipper' button.
- Enrollment:** Enrollment not found (Not completed) with a 'Go to enrollment' button.
- Invoice:** Invoice not found (Not completed) with a 'Go to invoice' button.
- Requester:** Waste Disposer --- (Completed) with a 'Go to requester' button.

## Enrollment process

The waste recycling process starts with the shredding of the waste





The shredded waste is placed in large bags equipped with chips



## Recycling process – Job batches management

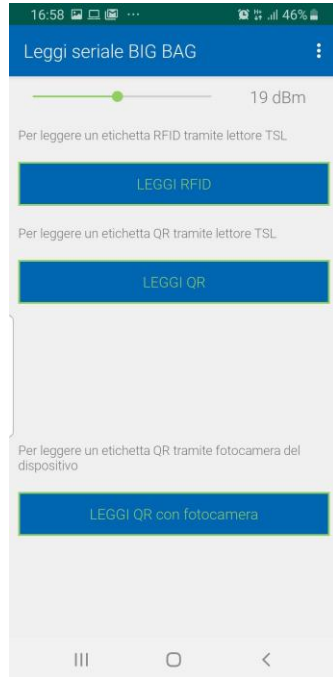
With the production module are tracked and managed the processes inside the single jobs for panel production.

Lista batch

#	ID	Azienda	Descrizione	Start Time	Ora fine	Specifiche	
1	635	1	1 Mixing			1 Mixing	
2	636	1	2 TurboBinding			2 TurboBinding	
3	637	1	3 RfidInsert			3 RfidInsert	
4	638	1	4 Press			4 Press	

# Mixing station batch management

Operator is requested to pick a big bag for tower 2



Picking List Of Bags Discharge %ID

**T1**

Id	Serial2	Name	Big Bag Serial	Description	Bag Mov	Location	Weight
481	t1	Fiberglass Laminate Std	3	Tower 1	177	4	114.88

**T2**  
 Tower needs 322.81 to be completely discharged.

**T3**

Id	Serial2	Name	Big Bag Serial	Description	Bag Mov	Location	Weight
481	t3	Pet Powder	1	Tower 3	178	6	108.93

**T4**

Id	Serial2	Name	Big Bag Serial	Description	Bag Mov	Location	Weight
544	t3	Pet Powder	1	Tower 3	178	6	108.93

field(\$model, 'status')->hiddenInput()->label(false) ?>


**Conferma**



## Telemetry data of pilot plant

All production processes can be monitored in **Real time**

← → ↻ Not secure | dev.retracking.it/panel/index


Operazioni

🏠 - Pannelli

**Pannelli**

Visualizzo 1-20 di 1.268 elementi.

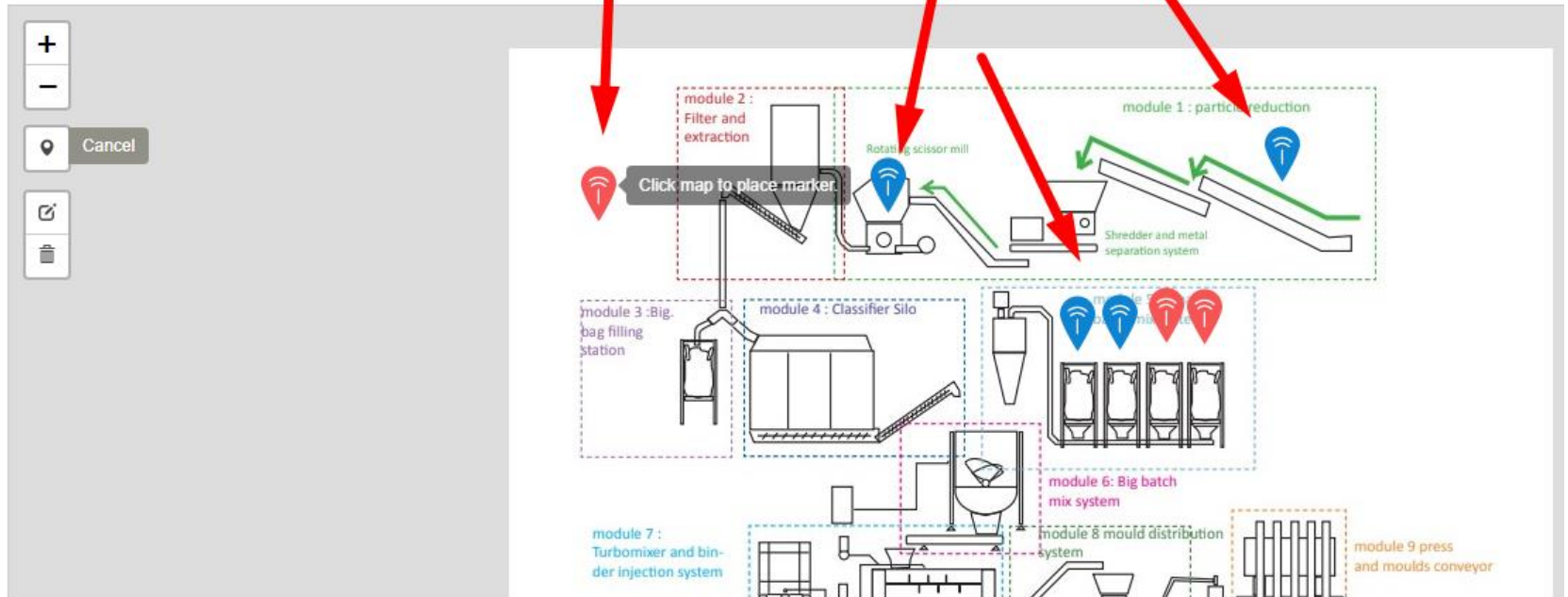
#	ID	N. seriale	Lavoro	Ora creazione pannello
1	4086		Safe test	21:41 02/07/2019
2	4087		Safe test	
3	4088		Safe test	
4	4089		Safe test	
5	4090		Safe test	
6	4091		Safe test	
7	4092		Safe test	

Dashboard  
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 • Mov. sacco  
 • Caratteristiche  
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# Web SCADA

## Supervision Control and Data Acquisition

Pannello di controllo produzione



## Retracking Mobile App

An Android application is available and is designed for management of:

- **Waste disposal**

Collect photos, fill specifications

- **Waste collection and shipment**

Track collection, create shipment labels

- **Enrollment process**

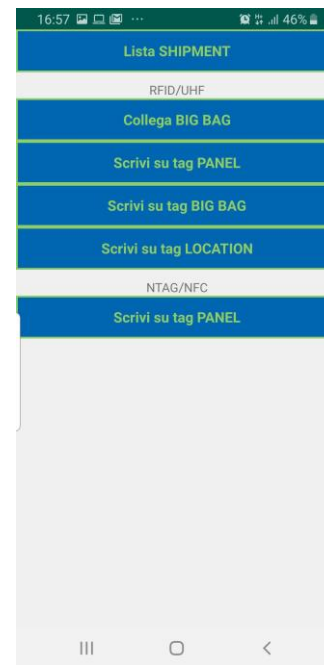
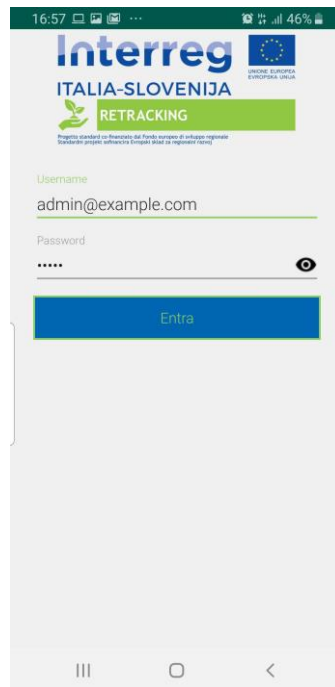
Manage checking and quality check

- **Panel identification**

Retrieve data from RFID chip, stock management, quality control



## Screens of the Mobile App



# Project partners



Polo Tecnologico di Pordenone (IT)



Gees Recycling (IT)



Zavod za gradbeništvo Slovenije (SLO)



Infordata Sistemi Srl (IT)



Gospodarska zbornica Slovenije (SLO)