HYPER MICRON

ELECTRONIC TOLL COLLECTION

USER GUIDES

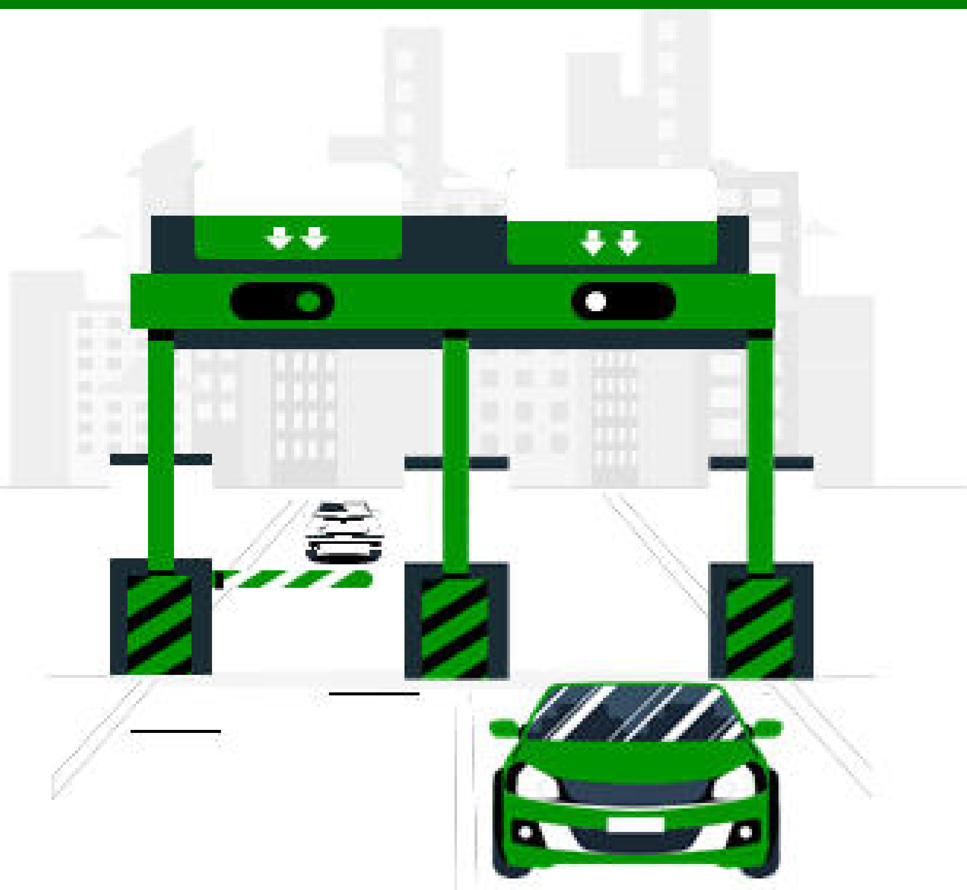


TABLE OF CONTENTS

I. OVERVIEW

I.1. *Document purpose*

This document is created to support end users to operate the toll collection software that meet their all business requirements.

I.2. *Document scope*

The document provides usage instructions for the toll collection software installed at cabin and the back-office installed at premise data center, a component of the toll collection system, responsible for managing toll collection transactions, synthesizing reports, and configure core data categories, helping to improve the efficiency of managing toll collection activities.

The software includes features for the following operations:

No	Major	User object
1.	Software synthesizes input lanes	System users
2.	Mixed exit lane ticket control software	System users
3.	Central fee collection software	System users
4.	Post-inspection monitoring software	System users
5.	License plate recognition software	System users

Table 1List of guiding operations

The document is organized so that readers can grasp the common characteristics and features when using the software in section **II. General introduction**, and provide detailed instructions for each operation in major sections starting from III, for each specific user group mentioned in the table above.

I.3. *Terminologies and abbreviations*

No.	Terminologies/abbreviation	Description
1	UM	User Manuals. Instruction document
2	Database	Database
3	ETC	Electronic Toll Collection - toll collection solution, using RFID codes
4	RFID	Radio Frequency Identification - Technology that uses electromagnetic fields to automatically identify and track tags that support this technology attached to objects
5	CSC card	Identification cards are often used in parking operations
6	Tap&Go	Use bank cards for POS payments
7	VietQR	VietQR complies with EMV Co.'s QR payment standard and the set of Basic Standards for QR codes issued by the State Bank of Vietnam in Decision No. 1928/QD-NHNN.

Table 2 List of terms and acronyms

II. SOFTWARE OPERATION INSTRUCTIONS AT CABIN

II.1. *Login function*

II.1.1. *Implementation conditions*

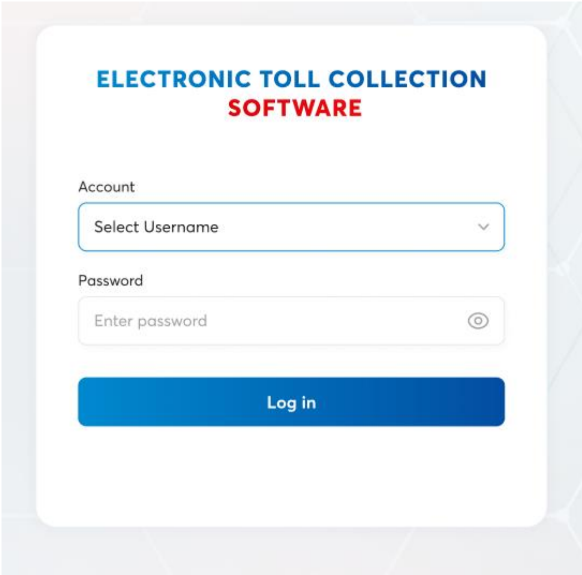
Functions used when collecting fees for members who have been granted an access account include: login name and password.

II.1.2. *Implementation context*

Cabin operator logs into the toll collection system.

II.1.3. *The order of execution*

Step 1: Cabin operator starts up the toll collection system, the system displays the login screen:



Step 2: The cabin operator selects the account in the dropdown list under the Account section.

Step 3: The cabin operator enters account information or swipes their ID card, the software will log them in automatically and, based on the current time, it shows the work shift accordingly.

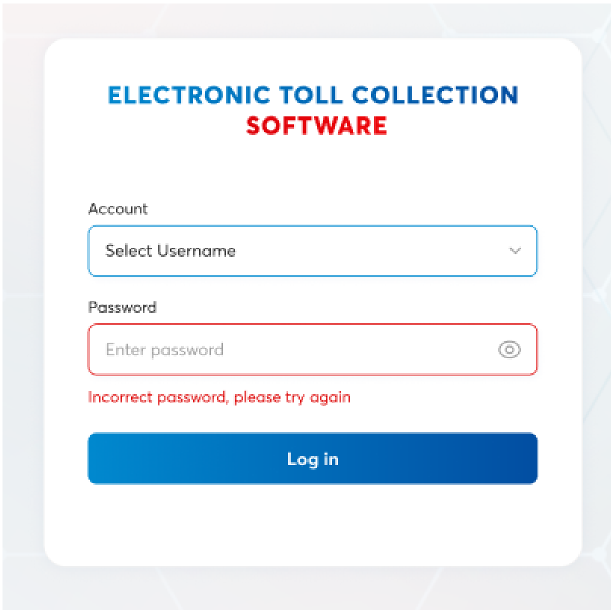
By default, the icon indicates the password is masked as "****".

Click on the icon the password will be disclosed.

Step 4: Click the Login button.

If successful, the system redirects the cabin operator to the main screen.

If failure, the system displays the message "Password is incorrect, please try again"



II.2. *Shortcuts on the main screen*

Shortcuts	Function
F1	Select vehicle class 1
F2	Select vehicle class 2
F3	Select vehicle class 3
F4	Select vehicle class 4
F7	Input vehicle’s plate number
F8	Open barrier (keep open until F9 is pressed)
F9	Close barrier
F10	Print sales report
F11	Print sales report & log out
F12	Confirm cash payment and print receipt
Ctrl + Delete	Delete a vehicle in the queue
Ctrl + Insert	Add a new vehicle to the queue (Insert a new vehicle at the beginning of the queue, change the current transaction status to pending, change the barrier status, …)
Ctrl + E	Reprocess the fee calculation and perform the payment
Ctrl + P	Reprint the receipt (The most recent one)
Ctrl + Shift + H	Delete vehicle's lane-in information
Ctrl + F	Find vehicle's lane-in information using its plate number

II.3. *Vehicle class selection functionalities*

II.3.1. *Implementation conditions*

The cabin operator has successfully logged into the system.

II.3.2. *Implementation context*

The vehicle stops at the cabin.

The function is used when the cabin operator needs to select the correct vehicle class in order to calculate fee precisely.

II.3.3. *The order of execution*

Step 1: The vehicle stops at the cabin

Step 2: The cabin operator checks the vehicle information on the main screen and compares it with the vehicle stopping at the cabin.

Step 3: If vehicle class information is wrong or missing, the cabin operator presses **F1** to **F4** to re-select the correct vehicle class. The system then recalculates the fee and updates the main screen.

II.4. *Manual plate number input functionalities*

II.4.1. *Implementation conditions*

The cabin operator has successfully logged into the system.

II.4.2. *Implementation context*

The vehicle stops at the cabin.

This function is used when the cabin operator needs to re-enter the vehicle's plate number to recalculate the fee.

II.4.3. *The order of execution*

Step 1: The vehicle stops at the cabin

Step 2: The cabin operator checks whether or not the vehicle's plate number has been displayed on the main screen. If not, move to step 3

Step 3: The cabin operator presses **F7,** enter plate number manually, and hit Enter

Step 4: The system recalculate the fee and display information on the main screen

II.5. *Multiple priority vehicles open allowance functionalities*

II.5.1. *Implementation conditions*

The cabin operator has successfully logged into the system.

II.5.2. *Implementation context*

There are multiple priority vehicles that need to go through the cabin

Cabin operators need to open the barrier for these priority vehicles

II.5.3. *The order of execution*

Step 1: Barrier is in closed state

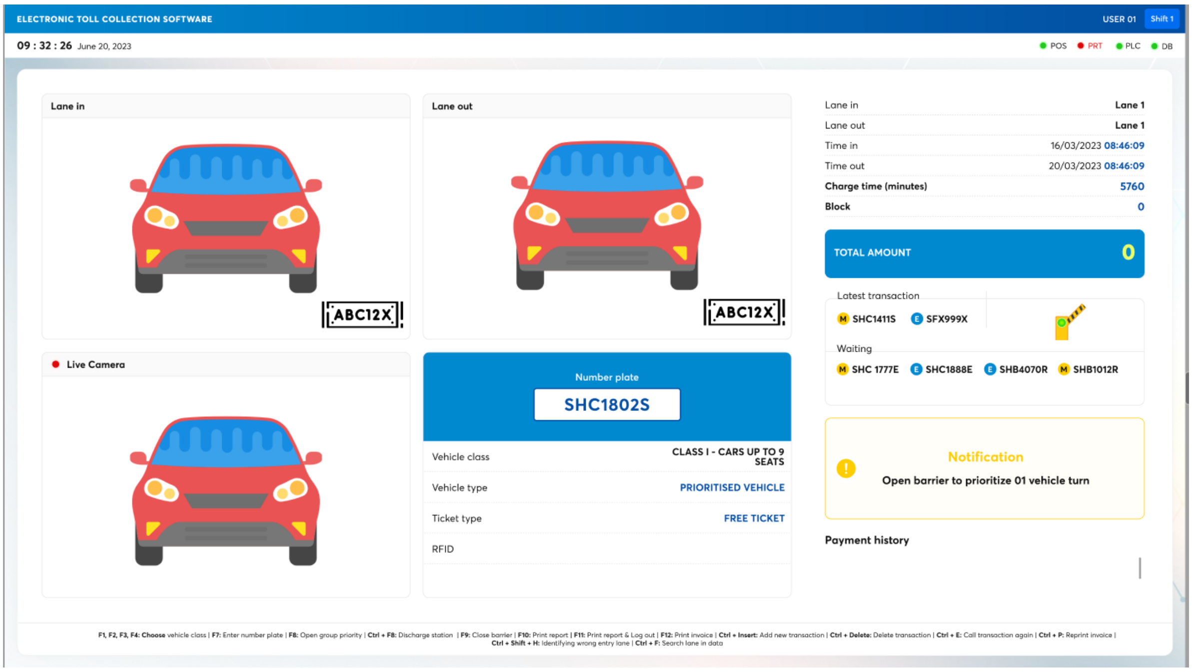
Step 2: The cabin operator presses **F8** to open the barrier

Step 3: The system opens the barrier to let the priority vehicles go through

Step 4: A message will be displayed on the main screen

- Heading: Notice

Sub: Open for priority convoys



II.6. *Sales reports and close of shift functionalities*

II.6.1. *Implementation conditions*

The cabin operator has successfully logged into the system.

II.6.2. *Implementation context*

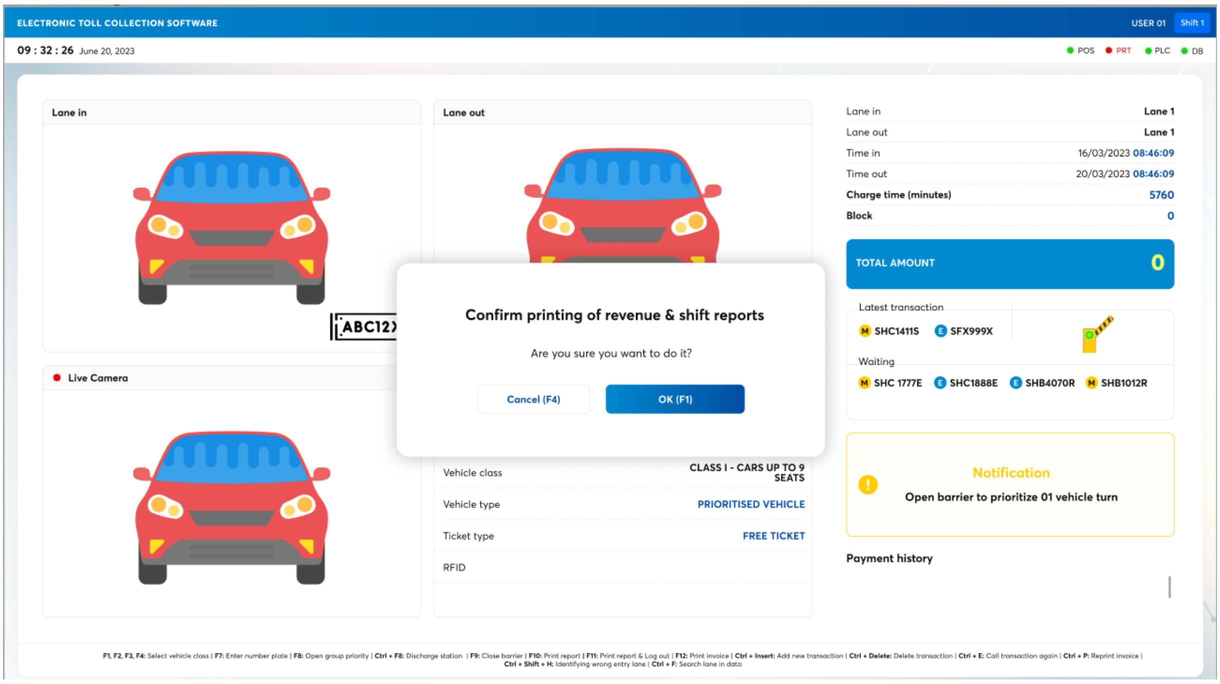
The cabin operator finishes their shift.

The cabin operator needs to print out the sales report and log out.

II.6.3. *The order of execution*

<u>**Step 1:**</u> The cabin operator presses **F11**

<u>**Step 2:**</u> The system displays the message "Confirm printing of revenue and shift reports”



<u>**Step 3:**</u> The cabin operator clicks **[OK]**

<u>**Step 4:**</u> The system exports the report file and saves it to the report folder on the desktop

<u>**Step 5:**</u> The printer control system prints the final report

<u>**Step 6:**</u> The system logs out of the account and returns to the login screen

II.7. *Receipt functionalities*

II.7.1. *Implementation conditions*

The cabin operator has successfully logged into the system.

II.7.2. *Implementation context*

The driver pays the fee by cash

The cabin operator needs to print out the receipt for the driver

II.7.3. *The order of execution*

Step 1: The cabin operator receives cash and confirms the payment by pressing **F12**

Step 2: The printer prints the receipt

Step 3: The cabin operator gives the receipt to the driver

III. BACK-OFFICE SOFTWARE INSTRUCTIONS

III.1. *Log in*

III.1.1. *Scope of application*

The above function is used when the staff has been granted an access account including: staff name and password. The staff wants to log in to the system

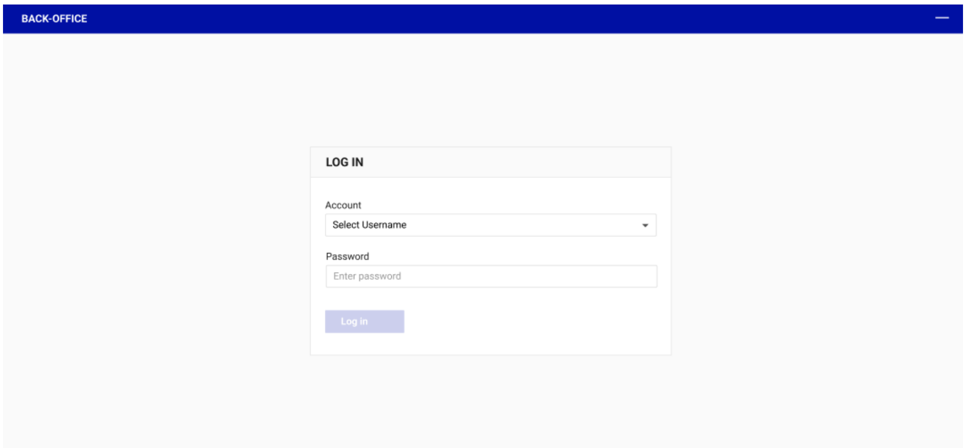
III.1.2. *Implementation conditions*

The user of the control system at the station has been created and given an account/password to use the system.

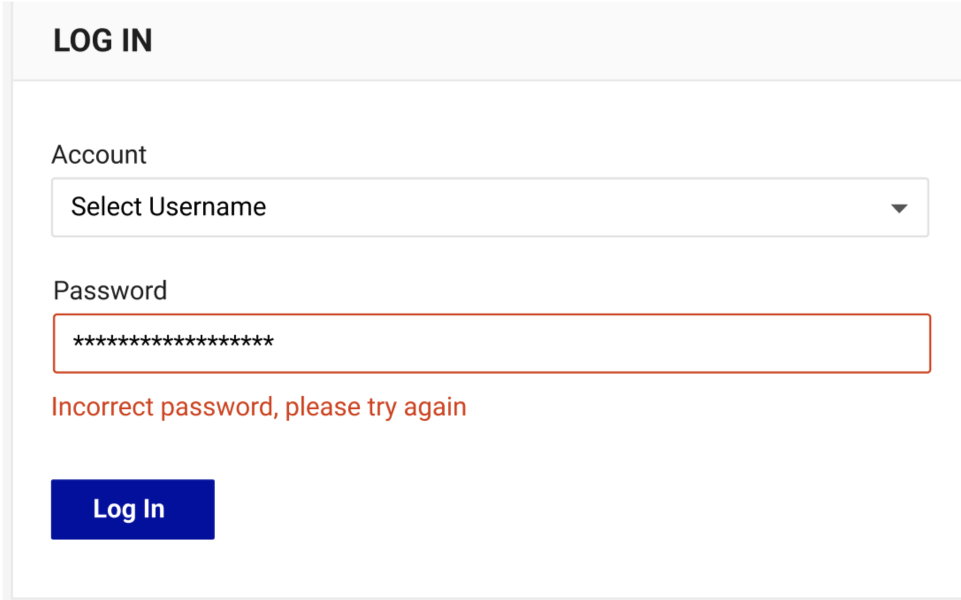
III.1.3. *The order of execution*

Step 1: Open the software, select staff and enter password

Step 2: Click **"Log in"**



- In case of failed login or incorrect password, the message "Incorrect account or password" will be displayed.



IV. INSTRUCTIONS FOR ADMINISTRATION LIST SECTION

IV.1. *Vehicle category management function*

IV.1.1. *Scope of application*

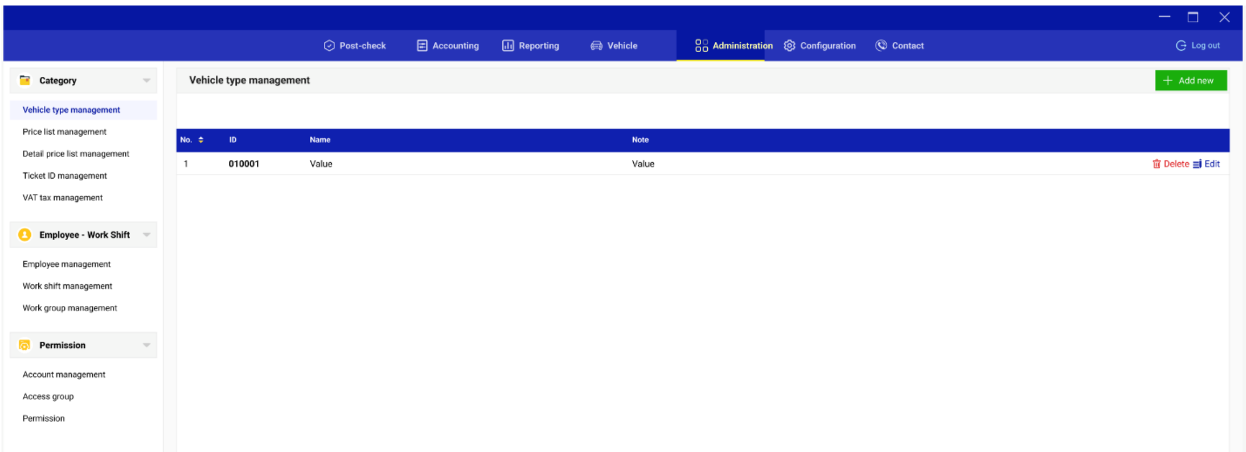
The function is used when staffs want to view, update, or delete the vehicle type list that has been created.

IV.1.2. *Implementation conditions*

The user of the control system at the station has been created and given account/password permissions to use the system.

IV.1.3. *The order of execution*

Step 1: Access the system and log in. On the function bar, select the **"Administration" menu, then select the "Vehicle type management"** subcategory. The Vehicle Type Management screen will display as follows:



- **Procedure to add new vehicle type:**

  Select the **"Add new" button** in the upper right corner of the screen to add a new vehicle type.

  The system displays the Add new vehicle type window, the user needs to enter the following content:

  - Vehicle type name (Required)
  - Notes (Optional)

  Then press the **"Add new vehicle type"** button to save the newly added content, the screen will display the vehicle type information that just entered below the list. Or press the **"X"** button to undo the actions you just performed.

- **Steps to edit vehicle type information:**

  Select vehicle type information in the Vehicle Type List. Click the **"Edit" button** on the right of that vehicle type, the vehicle type information update screen will be displayed as follows:

  Here, staffs can edit the Vehicle Type Name box and the Notes box.

  Then click the button **"Update vehicle type"**

- **Delete vehicle type information step:**

  Click the **"Delete" button** in the right of the vehicle type information field you want to delete. The screen will display a confirmation window as follows:

  Then users will have two options:

- Click the **"Agree to delete" button** to confirm deletion of the selected vehicle type.
- Click the **"Skip"button** to cancel the operation.

IV.2. *Price list management function*

IV.2.1. *Scope of application*

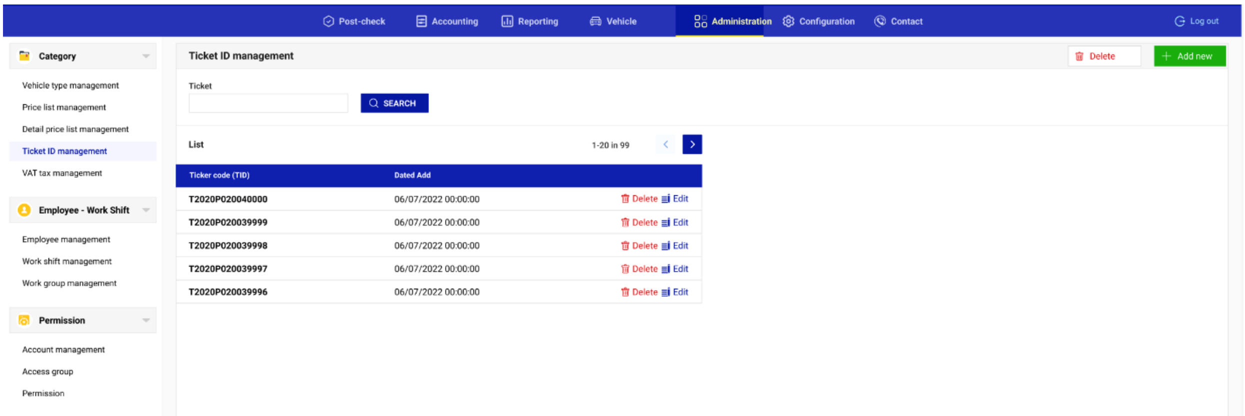
This function is used when staffs want to view and search for a list of existing price lists. Or need to add, delete, or edit the price list list.

IV.2.2. *Implementation conditions*

The user of the control system at the station has been created and given an account/password to use the system.

IV.2.3. *The order of execution*

On the function bar, users select the Administration menu, then select the **"Category" menu** on the left, select **"Manage price list".** The price list management screen will display as follows:



- **Filtering and searching for price lists:**

  There is a search box including above the screen:

  - Price list code box: used to enter the price list code you want to search for
  - Price list name box: used to enter the name of the price list you want to search for

  Then, click **"Search"**to perform the price list search operation.

- **Steps to add a new price list:**

  Select the **"Add new" button** in the upper right corner of the screen to add a new price list.

  In the appeared window, enter information into the boxes:

  - Price list name (Required)
  - Effective date
  - Describe

Then click the **“Add new price list”** button to save the newly added content, the screen will display the price list information that just entered in the list. Or press the **“X”** button to undo the actions you just performed.

- **Steps to edit price list operations:**

  Click the **“Edit” button** in the right of the price list field you want to edit.

  Here, staffs can edit the content of the Price List Name box, Effective Date box and Description box

  Then click the **“Update price list”** button to perform the editing operation successfully.

- **Steps to delete vehicle type information:**

  Click the **"Delete” button** in the right of the price list field you want to delete.

  The screen will display a confirmation window as follows:

  Then users will have two options:

  - Click the **"Agree to delete” button** to confirm deletion of the selected price list.
  - Click the **“Skip”button** to cancel the operation.

IV.3. *Detailed price list management function*

IV.3.1. *Scope of application*

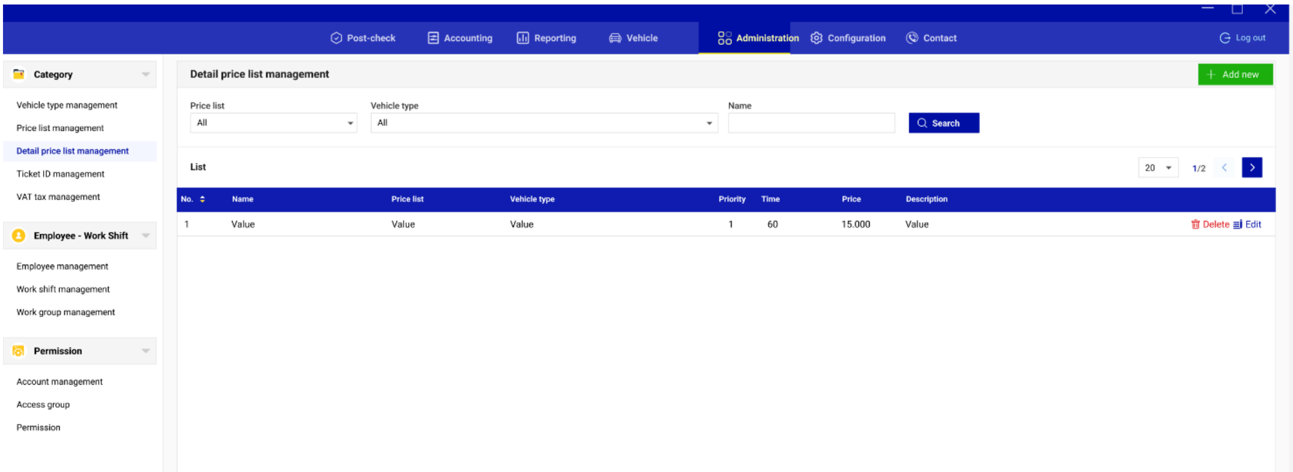
This function is used when staffs want to view and search for details of existing price lists. Or need to add, delete, or edit the detailed price list list.

IV.3.2. *Implementation conditions*

The user of the control system at the station has been created and given an account/password to use the system.

IV.3.3. *The order of execution*

On the function bar, users select the Administration menu, then select the **“Category”menu** on the left, select **“Manage price list details".** The price list detail management screen will display as follows:



- **Steps to add new price list details:**

  Select the **"Add new" button** in the upper right corner of the screen to add a new price list detail.

  The system displays the Add new price list details window, the user needs to enter the following content:

  - Price list (Required)
  - Vehicle type (Required)
  - Detailed name (Required)
  - Order
  - Length (required – unit is "minutes")
  - Unit price (required)
  - Description (Optional)

  Then click the **"Add new detailed price list" button** to save the newly added content, the screen will display the details of the price list just entered below the list. Or press the **"X"** button to undo the actions you just performed.

- **Steps to edit price list details:**

  Click the **"Edit" button** in the right of the price list details you want to edit.

  Here, staff can edit Price List, Vehicle Type, Detailed Name, Order, Length, Unit Price, Description.

  Then click the **"Update information" button**

- **Deleting price list details:**

Click the **"Delete" button** in the right of the price list detail field you want to delete.

The screen will display a confirmation window as follows:

Then users will have two options:

- Click the **"Agree to delete" button** to confirm deletion of the selected price list details.
- Click the **"Skip" button** to cancel the operation.

- **Search filtering operations:**

  Above the screen is a search box including:

  - Price list box: select the price list list
  - Vehicle type box: select the vehicle type list
  - Price list name box: enter the detailed name of the price list you want to find

  Then, click **"Search"** to perform the search for the vehicle type.

IV.4. *Ticket code management function*

IV.4.1. *Scope of application*

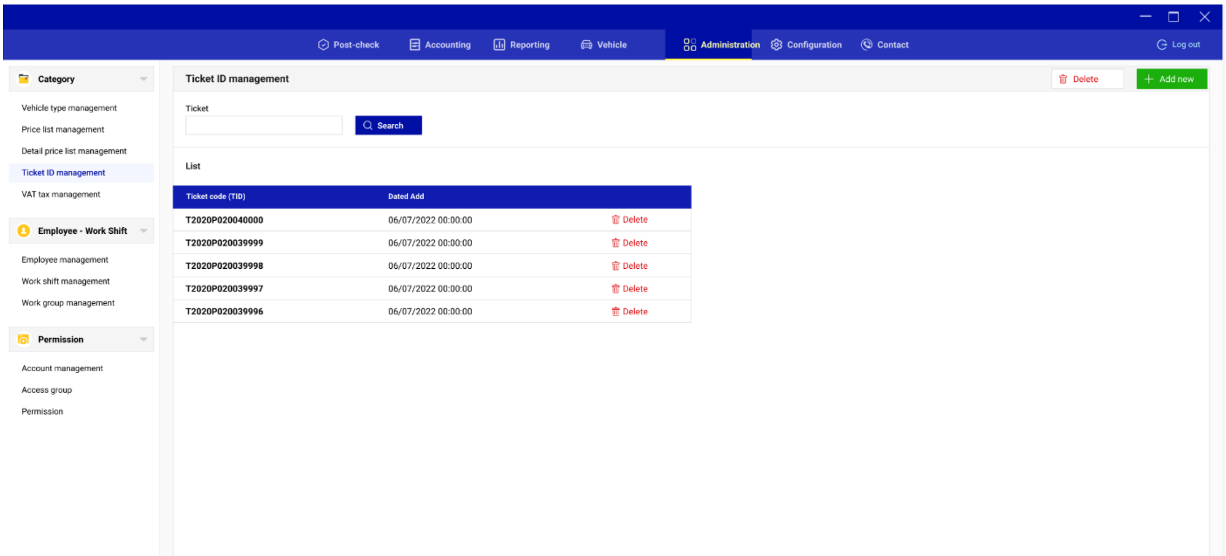
This function is used when staffs want to view and search for existing ticket codes. Or need to add, delete, or edit the active ticket code list.

IV.4.2. *Implementation conditions*

The user of the control system at the station has been created and given an account/password to use the system.

IV.4.3. *The order of execution*

Step 1: Access the system and log in. On the function bar, select the **"Administration" menu, then select the "Ticket code management"** subcategory. The Ticket Code Management screen will display as follows:



- **Steps to add a new ticket code:**

  Select the **"Add new" button** in the upper right corner of the screen to add a new ticket code.

  The system displays the Add new ticket code window, including the following information fields that need to be filled in:

  - Ticket type code (required)
  - From number (required): enter the starting number (Format: #######)
  - To number (required): enter ending number (Format: #######)

  Then click the **"Add new ticket code "button** to save the newly added content. Or press the **"X"button** to undo the actions you just performed.

- **Deleting ticket series:**

  From the list screen, click **"Delete ticket row"** in the right corner of the screen, the system displays a window to fill in the information to be deleted as follows:

  The staff fills in the information: **"Ticket type code"** to delete, **"From number", "To number"** to delete and click **"Delete ticket range"** to perform the operation.

  ***Note: This action will automatically delete the system of tickets just entered*

- **Steps to delete a ticket code:**

Select Ticket Code in the Active Ticket Code List. Click the **"Delete" button** in the right of that ticket code field, the screen will display a confirmation window as follows:

Then users will have two options:

- Click the **"Agree to delete" button** to confirm deletion of the selected price list details.
- Click the **"Skip" button** to cancel the operation.

IV.5. *Staff management function*

IV.5.1. *Scope of application*

The function is used when the user want to:

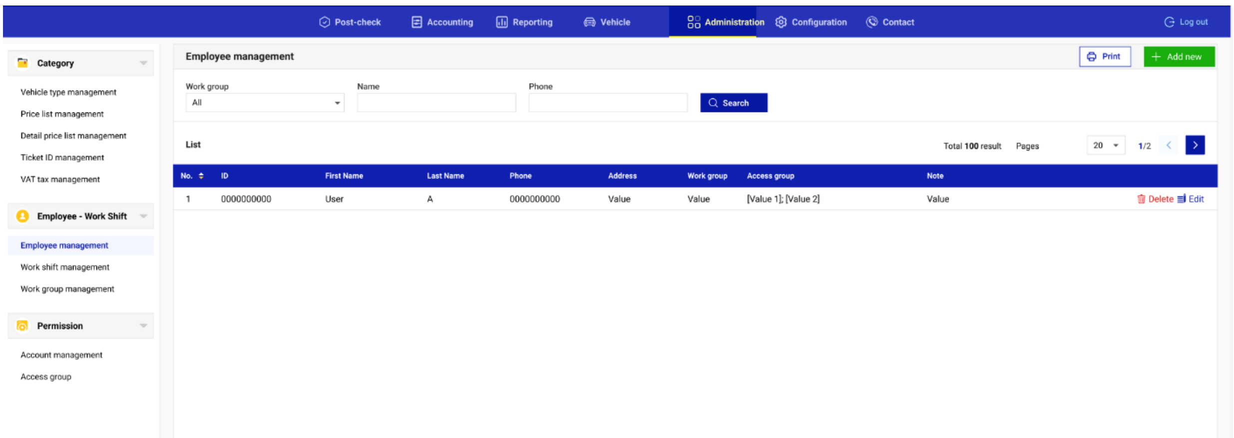
- View, update, and delete the created staff list.
- Add new staff

IV.5.2. *Implementation conditions*

The user of the control system at the station has been created and given account/password permissions to use the system.

IV.5.3. *The order of execution*

Step 1: Access the system and log in. On the function bar, select the **"Administration" menu,** in the **Staffs - shifts section,** select **"Staff management".** The Staff Management screen will display as follows:



- **Steps to add new staff:**

Select the **“Add new” button** in the upper right corner of the screen to add a new staff.

The system displays the Add new staff window, the user needs to enter the following content:

- Last name (required)
- Name (required)
- Group (required)
- Phone number
- Address
- Note
- Password (required)
- Confirm password (required)
- Account authorization

  Click the **"Choose permissions” button** to assign permissions to the account.

Then click the **“Add new staff “button** to save the newly added content, the screen will display the staff information just entered in the list. Or press the **“X “button** to undo the actions you just performed.

- **Steps to update staff information:**

  Click the **“Edit”button** in the right of the staff field you want to edit

  The staff update window includes information: Staff code, Full name, Phone number, Team, Address, Notes, New password, Confirm password, Account authorization.

  After editing information, click the **“Update information” button** to save the new information or press **“X”** to cancel the operation.

- **Deleting staff information:**

  Click the **“Delete” button** in the right of the staff field you want to delete. The screen will display a confirmation window as follows:

  Then users will have two options:

- Click the **"Agree to delete" button** to confirm deletion of the selected staff.
- Click the **"Skip"button** to cancel the operation.

IV.6. *Team management function*

IV.6.1. *Scope of application*

The function is used when the user want to:

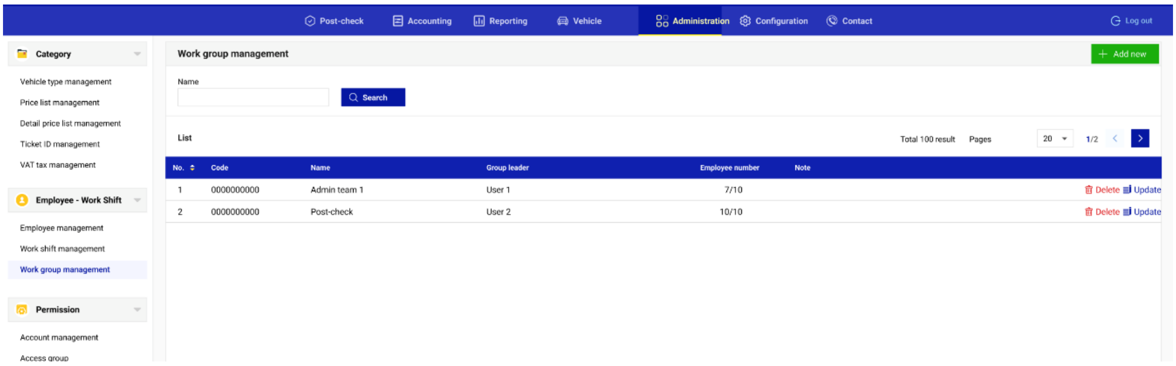
- View, update, and delete the created workgroup list
- Add new working group

IV.6.2. *Implementation conditions*

The user of the control system at the station has been created and given account/password permissions to use the system.

IV.6.3. *The order of execution*

Step 1: Access the system and log in. On the function bar, select the **"Administration" menu,** in the **Staffs - shifts section,** select **"Team management".** The Team Management screen displays as follows:



- **Steps to add a new working group:**

  Select the **"Add new" button** in the upper right corner of the screen to add a new group.

  The system displays the Add new working group window, including the following information fields that need to be filled in:

  - Team name (required)
  - Number of workers
  - Team leader (Select)

- Note

Then click the **“Add new working group” button** to save the newly added content. Or press the **"X” button** to undo the actions you just performed.

- **Steps to update working group:**

Click the **“Edit” button** in the right of the workgroup field you want to edit

The working group update window includes information: Team name, Number of staffs, select Team Leader, Notes.

After editing information, click the **“Update information” button** to save the new information or press **“X”** to cancel the operation.

- **Steps to delete group information:**

Click the **“Delete “button** in the right of the workgroup field you want to delete. The screen will display a confirmation window as follows:

Then users will have two options:

  - Click the **"Agree to delete” button** to confirm deleting the selected workgroup.
  - Click the **“Skip” button** to cancel the operation.

- **Working group filtering operation:**

At the Team Management screen, enter the information you want to search for and click the **“Search” button.**

IV.7. *Shift management function*

IV.7.1. *Scope of application*

The function is used when the user want to:

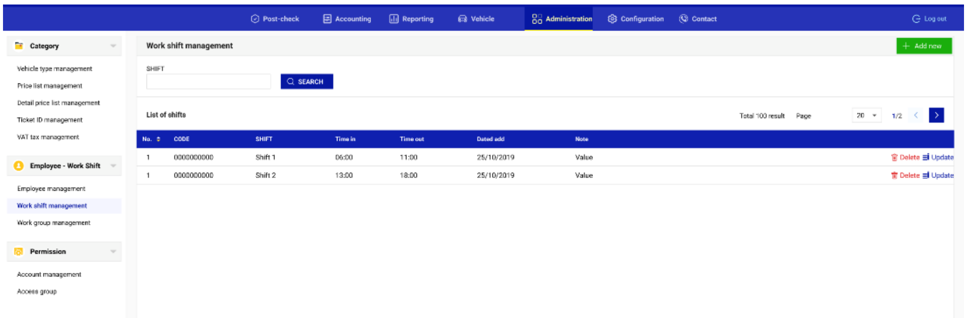
- View, update, and delete the created shift list
- Add new work shift

IV.7.2. *Implementation conditions*

The user of the control system at the station has been created and given account/password permissions to use the system.

IV.7.3. *The order of execution*

Step 1: Access the system and log in. On the function bar, select the **"Administration" menu,** in the **Staffs - shifts section,** select **"Shift management".** The Shift Management screen displays as follows:



- **Steps to add a new shift:**

  Select the **"Add new" button** in the upper right corner of the screen to add a new shift.

  The system displays the Add new shift window, including the following information fields that need to be filled in:

  - Case name (required)
  - Shift start time (required)
  - Shift time (required)
  - Effective date (required)
  - Note

  Then click the **"Add new shift" button** to save the newly added content. Or press the **"X" button** to undo the actions you just performed.

- **Steps to update work shifts:**

  Click the **"Edit" button** in the right of the shift field you want to edit

  The shift update window includes information: Shift name, Shift start time, Shift exit time, Effective date, Notes.

  After editing information, click the **"Update information" button** to save the new information or press **"X"** to cancel the operation.

- **Steps to delete shift information:**

Click the "**Delete" button** in the right of the shift field you want to delete. The screen will display a confirmation window as follows:

Then users will have two options:

- Click the **"Agree to delete" button** to confirm deleting the selected shift.
- Click the **"Skip" button** to cancel the operation.

- **Search operation shift:**

At the Shift Management screen, enter the information you want to search for and press the **"Search" button.**

IV.8. *Permission Group management function*

IV.8.1. *Scope of application*

The function is used when the user want to:

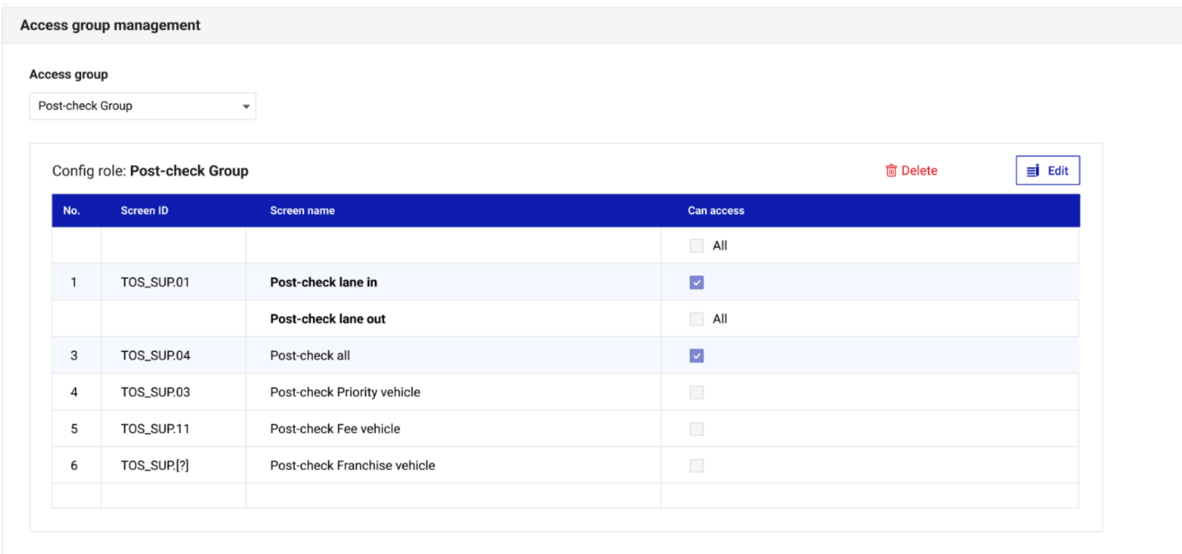
- View, update, and delete the list of created permission groups
- Add new permission group

IV.8.2. *Implementation conditions*

The user of the control system at the station has been created and given account/password permissions to use the system.

IV.8.3. *The order of execution*

Step 1: Access the system and log in. On the function bar, select the **"Administration" menu,** in the **Permissions section,** select **"Permission group".** The Manage Permission Groups screen displays as follows:



- **Steps to add a new permission group:**

  Select the **"Add new" button** in the upper right corner of the screen to add a new permission group.

  The system displays the Add new working permission group window, including the following information fields that need to be filled in:

  - Permission group name (required)
  - Set permissions for permission groups

  Then click the **"Add permission group" button** to save the newly added content. Or click the **"Cancel" button** to cancel the actions you just performed.

- **Steps to update permission group:**

  Click the **"Edit" button** in the upper right corner of the permission table
  The permission group update window includes information: Permissions granted to the permission group.
  After editing information, click the **"Update information" button** to save the new information or click the **"Cancel" button** to cancel the operation.

- **Steps to delete permission group:**
  Click the **"Delete permission group" button** in the upper right corner of the permissions panel. The screen will display a confirmation window as follows:
  Then users will have two options:
  - Click the **"Agree to delete" button** to confirm deletion of the selected permission group.
  - Click the **"Skip" button** to cancel the operation.

IV.9. *Login History management function*

IV.9.1. *Scope of application*

The function is used when the user want to:

- View system login history of staffs

IV.9.2. ***Implementation conditions***

The user of the control system at the station has been created and given account/password permissions to use the system.

IV.9.3. ***The order of execution***

- **Step 1:** Access the system and log in. On the function bar, select the **“Administration” menu,** in the **Authorization section,** select **“Login history”.**
- **Steps to search login history:**

At the Login History Management screen, enter the information you want to search for and click the **“Search” button.**

V. INSTRUCTIONS FOR MEDIA MANAGEMENT PROFESSIONAL SECTION

V.1. *Priority vehicle management function*

V.1.1. *Priority vehicle management*

V.1.1.1. *Scope of application*

Description: The above function is used when staffs want to manage information about priority vehicles including:

- Manage registration information
- View priority registration history
- Add, update, delete media

V.1.1.2. *Implementation conditions*

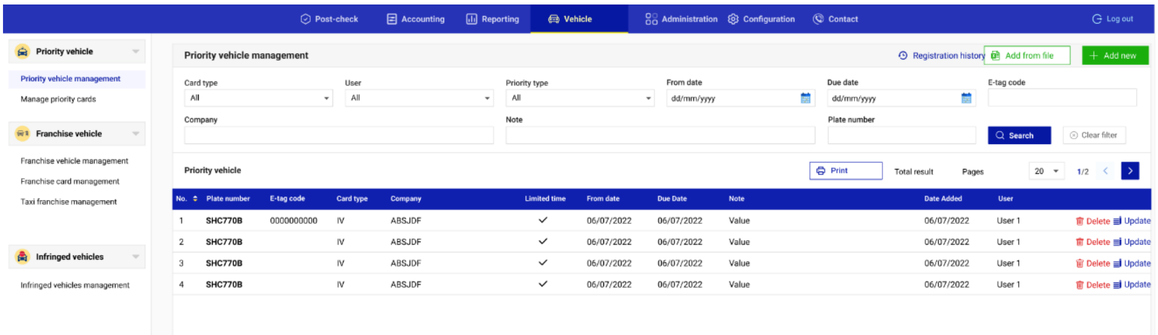
The user of the control system at the station has been created and given an account/password to use the system.

V.1.1.3. *The order of execution*

V.1.1.3.1. Priority vehicle management

Description: Used to update and manage the list of priority vehicles allowed to circulate through toll stations or edit and delete priority vehicles that are no longer in circulation.

The user selects the **"Vehicles” menu** on the function bar, then selects the **"Priority vehicle management” icon** in the **Priority Vehicles section.** The system will display the priority vehicle list screen as follows:



- **New addition operation:**

  Select the **"Add new" button** to add a new priority vehicle, the add new vehicle popup displays as follows:

  - Enter license plate number
  - Choose your preference and card type
  - Select the effective date (from day to day) if the preferred vehicle type is a limited vehicle
  - Enter units
  - Enter notes

- **Steps to update priority vehicles:**

  Click the **"Edit" button** in the right of the priority vehicle field you want to edit

  The shift update window includes: License plate, Etag, Card type, Priority type, Validity period, Unit, Notes.

  After editing information, click the **"Update information" button** to save the new information or press **"X"** to cancel the operation.

- **Steps to delete priority vehicle information:**

  Click the **"Delete" button** in the right of the priority vehicle field you want to delete. The screen will display a confirmation window as follows:

  Then users will have two options:

  - Click the **"Agree to delete" button** to confirm deletion of the selected media.
  - Click the **"Skip" button** to cancel the operation.

- **Priority vehicle search operations:**

- Enter priority vehicle search conditions: License plate, Unit, Notes, Priority type, Tag type, Staff, E-tag code
- Select From import date To import date to limit the priority vehicle registration period
- Select the **"Search" button** to search for the priority vehicle you just entered. Select the **"Clear filter" button** to remove the old selected search criteria.

Add new operation from file

- Select the **"Add from file" button** to add a priority vehicle list from file
- Select the link to download files from your computer to the system
- Select the **"Add new vehicle" button** to upload the selected file to the system.

Print operation:

- Search for priority vehicles according to the entered search conditions.
- Select the **"Print list" button** to print the list of priority vehicles you just searched for.

Description: Used to search the history of add, update, and delete operations on priority vehicles

Step 1: On the priority vehicle list screen, select **"Registration history".**

Step 2: Perform a search or print the list according to the instructions

Search operation:

- Enter priority vehicle search conditions: License plate, Unit, Notes, Priority type, Card type, Staff, Operation
- Select From update date To update date to limit the priority vehicle registration period
- Select the **"Search" button** to search for the priority vehicle history you just entered. Select the **"Clear filter" button** to remove the old selected search criteria.

Print operation:

- Search for priority vehicles in the registration history according to the search conditions entered.

- Select the **"Print list" button** to print a list of priority vehicle registration history and operations just searched.

V.1.2. *Manage priority cards*

V.1.2.1. *Scope of application*

Description: The above function is used when staffs want to manage priority card information including:

- Manage registration information
- Add, update, delete tags

V.1.2.1.1. Implementation conditions

The user of the control system at the station has been created and given an account/password to use the system.

V.1.2.2. *The order of execution*

Description: Used to manage, update, and delete priority vehicle tags.

The user selects the **"Convenience" menu on the function bar, then selects the "Priority card management"** icon in the **Vehicles section. prioritize.**

Add a new priority tag

- Select the **"Add new" button** to add a new priority tag. Enter content in the **"Card type" box**
- Enter a Note if an annotation about the priority tag is needed
- Select **"Add new card"** to save the newly added content or **"X" button** to cancel the operations just performed.

Editing operations:

- Click **"Edit"** in the right of the priority card field you want to edit
- Enter editing content in the **Tag type** or Note box (if any)
- The card code is automatically generated from the system
- Select the **"Update information" button** to save the newly edited content or the **"X" button** to cancel the operations just performed.

Delete operation:

- Click **“Delete”** in the right of the priority tag field you want to delete, the request confirmation screen displays as follows
- Select the **“Agree to delete” button** to delete that priority tag in the list and click **“Skip”** to cancel the operation

V.2. *Franchise vehicle management function*

V.2.1. *Franchise vehicle management*

V.2.1.1. *Scope of application*

Description: Franchise vehicles include taxis, cooperatives, and franchise vehicles according to the unit's regulations. The above function is used when staffs want to manage information about franchised vehicles including:

- Manage registration information
- View franchise registration history
- Add, update, delete media

V.2.1.2. *Implementation conditions*

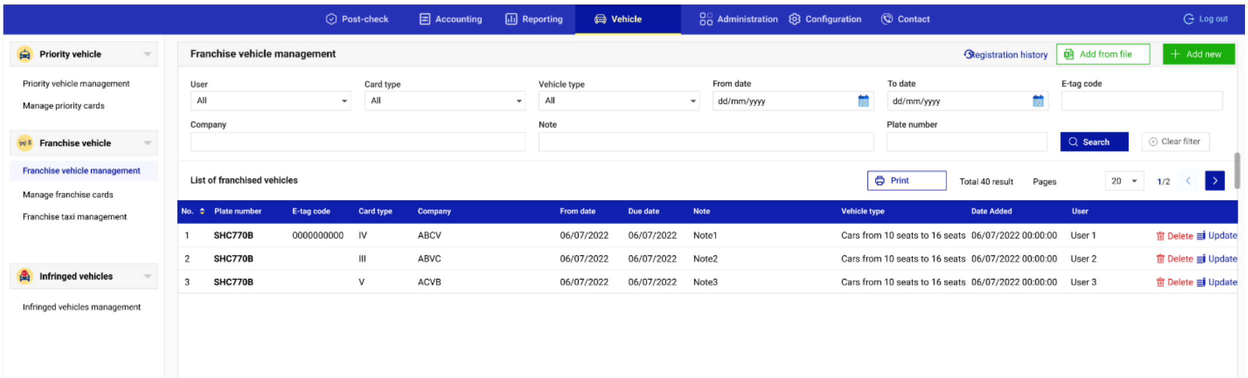
The user of the control system at the station has been created and given an account/password to use the system.

V.2.1.3. *The order of execution*

V.2.1.3.1. Franchise vehicle management

Description: Used to update and manage the list of franchise vehicles allowed to circulate through toll stations or edit or delete franchise vehicles that are no longer in circulation.

The user selects the **"Vehicles” menu** on the function bar, then selects the **"Franchise vehicle management” icon** in the **Franchise Vehicles section.** The system will display the franchise vehicle list screen as follows:



New addition operation:

- Select the **“Add new” button to add a new** franchise vehicle
  - Enter license plate number
  - Select vehicle type and card type
  - Enter the E-tag Code
  - Select effective date (from date to date)
  - Enter units
  - Enter notes

- **Steps to update franchised vehicles:**

  Click the **"Edit” button** in the right of the franchise vehicle field you want to edit

  The shift update window includes information: License plate, Etag, Card type, Vehicle type, Validity period, Unit, Notes.

  After editing information, click the **“Update information” button** to save the new information or press **“X”** to cancel the operation.

- **Steps to delete franchise vehicle information:**

  Click the **"Delete” button** in the right of the franchise vehicle field you want to delete. The screen will display a confirmation window as follows:

  Then users will have two options:

  - Click the **"Agree to delete” button** to confirm deletion of the selected media.
  - Click the **“Skip” button** to cancel the operation.

- **Steps to search for franchised vehicles:**

- Enter priority vehicle search conditions: License plate, Unit, Notes, Vehicle type, Tag type, Staff, E-tag code
- Select From import date To import date to limit the franchise vehicle registration period
- Select the **"Search" button** to search for the franchised vehicle you just entered. Select the **"Clear filter" button** to remove the old selected search criteria.

Add new operation from file

Select the **"Add from file" button** to add franchise vehicle list from file, the add from file popup displays as follows:

- Select the tag type applicable to the vehicle list to be uploaded
- Select the link to download files from your device to the system
- Select the **"Add new vehicle" button** to upload the selected file to the system.

Print operation:

- Search for franchised vehicles according to the search terms entered.
- Select the **"Print list" button** to print the list of franchised vehicles you just searched for.

Description: Used to search the history of adding, updating, and deleting operations on franchise vehicles

Step 1: In the franchise vehicle list, select **"Registration history".** The system displays the registration history of franchise vehicles on the screen as follows:

Step 2: Searching or printing the list as the instructions

Instruction for searching:

- Fill in the criterias for franchised vehicles: License plate, Unit, Notes, Vehicle type, Card type, Staff, Operation
- Select From update date To update date to limit the franchise vehicle registration period
- Select the **"Search"** to get results for the franchise vehicles history. Select the **"Clear filter"** to remove the old selected criteria.

- **Instruction for printing**:
  - Search for franchise vehicles in the registration history according to the criteria filled.
  - Select the **"Print"** to print a list of priority vehicle registration history and operations just searched.

V.2.2. ***Manage franchise cards***

V.2.2.1. *Scope of application*

Description: The function is used when Staffs want to manage franchise card information including:

- Manage registration information
- Add, update, delete cards

V.2.2.1.1. Implementation conditions

The function is performed by user of the system at the station. The user has been created and given an account/password to use the system.

V.2.2.2. *The order of execution*

Description: Used to manage, update, and delete franchise vehicle cards.

The user selects the **"Tool " menu** on the function bar, then selects the icon **" Franchise card management"** under section **Franchise vehicles.**

Adding a new franchise card

- Select the **"Add new cards"** to add a new franchise card.
- Fill in the **Card name box**
- Fill in the Notes if anything about the franchise card needed
- Select **" Add new card"** to save the newly added content or **"X"** to cancel.

- **Editing:**
  - Click **"Edit"** to the right of the franchise card field you want to edit
  - Fill the edited content in the **Card name** or Note box (if any)
  - The card code is automatically generated from the system

- Select the **"Update information"** to save the newly edited content or the **"X"** to cancel.

Deleting:

- Click **"Delete"** to the right of the franchise card field that you want to delete
- Select the **"Accept"** to delete that franchise card in the list and click **"Skip"** to cancel

- **Updating franchise vehicles:**

  Click the **"Edit"** on the right of the franchise vehicle field that you want to edit

  The shift update includes the following information: License plate, Etag, Card type, Vehicle type, Validity period, Unit, Notes.

  After editing information, click the **" Update information "** to save the new information or **" X "** to cancel.

- **Deleting franchise vehicle information:**

  Click the **"Delete"** on the right of the franchise vehicle field you want to delete. The screen will display a confirmation request as follows:

  Then users will have two options:

  - Click the **"Accept"** to confirm deletion of the selected media.
  - Click the **"Skip"** to cancel.

- **Searching for franchise vehicles:**

  - Fill the priority vehicle criteria: License plate, Unit, Notes, Vehicle type, Tag type, Staff, E-tag code
  - Select From import date To import date to limit the franchise vehicle registration period
  - Select the **"Search"** to search for the franchised vehicle you just entered. Select the **"Clear filter"** to remove the old selected criteria.

Adding new operation from file

Select the **"Add from file"** on add franchise vehicle list from file, the screen for adding from file displays as follows:

- Select the card type applicable to the vehicle list to be uploaded
- Select the link to upload files from your device to the system
- Select the **"Add new vehicle"** to upload the selected file to the system.

Printing:

- Search for franchised vehicles according to the filled criteria.
- Select the **"Print list"** to print the list of franchised vehicles you just searched for.

V.2.2.2.1. Look up franchise vehicle registration history

Description: Used to search the history of adding, updating, and deleting operations on franchise vehicles

Step 1: In the franchise vehicle list on the screen, select **"Registration history".**

Step 2: Perform searching or printing the list as the instructions

Searching:

- Fill the criteria for searching franchise vehicles: License plate, Unit, Notes, Vehicle type, Card type, Staff, Operation
- Select From update date To update date to limit the franchise vehicle registration period
- Select the **"Search"** to search for the franchise vehicle history. Select the **"Clear filter"** to remove the old selected criteria.

Printing:

- Search for franchised vehicles in the registration history according to the criteria.
- Select the **"Print list"** to print a list of priority vehicle registration history and operations just searched.

VI. INSTRUCTION FOR REPORT LIST SECTION

VI.1. *Scope of application*

The function is used when Staffs want to view and export various types of reports

VI.2. *Implementation conditions*

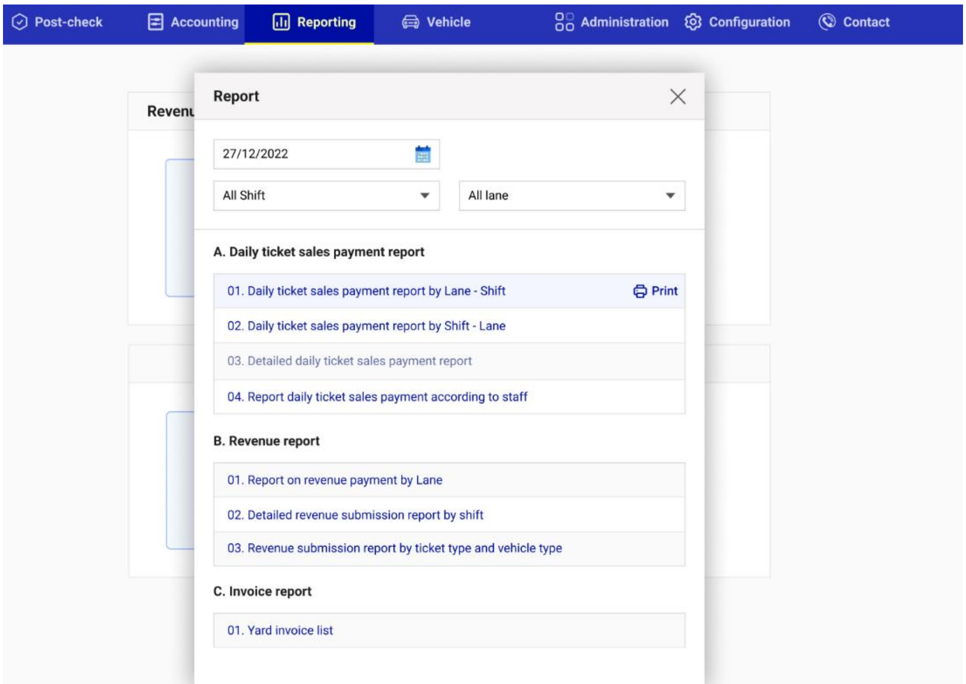
The function is performed by user of the system at the station. The user has been created and given an account/password to use the system.

VI.3. *Report categories*

VI.3.1. *Sales report*

VI.3.1.1. *Report category*

Step 1: Access the system and log in. On the function bar, select **" Report"**, then select **"Report category".** The screen will display as follows:



Step 2: Double-click on the report type you want to view details

- **Printing report:**

  Method 1: In the Report List Click the Print icon

  Method 2: View report in details, click **"Print"** on the left corner of the screen

VI.3.1.2. *Comprehensive report with shift breaks*

Step 1: Access the system and log in. On the function bar, select **"Report",** then select **"Comprehensive report with shift breaks".** The screen will display as follows:

Step 2: Double-click on a report to view in details

- **Printing report:**

  Method 1: In the Report List 🡪Click the Print icon

  Method 2: View report details, click **"Print"** on the left corner of the screen

VI.3.1.3. *Report revenue by payment method*

Step 1: Access the system and log in. On the function bar, select the **" Report"**, then select **"Report revenue by payment method".** The screen will display as follows:

Step 2: Select the date to view the report and click **"Print report"**

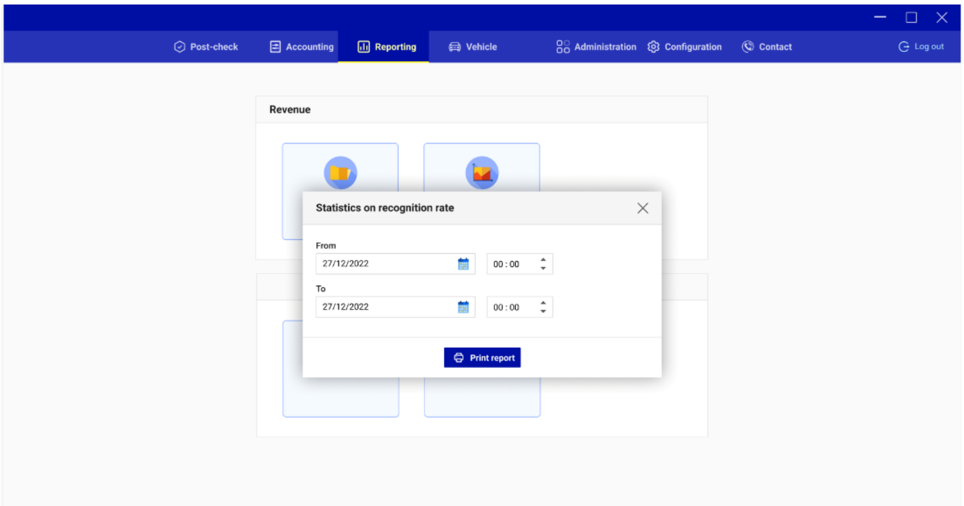
- **Printing report:**

  Click **"Print"** on the left corner of the screen

VI.3.2. *Report on traffic volume*

VI.3.2.1. *Recognition rate*

Step 1: Access the system and log in. On the function bar, select **"Report",** then select **"Recognition rate".** The screen will display as follows:



Step 2: Select the date to view the report and click **"Print report"**

- **Printing report:**

  Click **"Print"** on the left corner of the screen

VI.3.2.2. *Station discharge history*

VI.3.3. ***Statistic***

VI.3.3.1. *Vehicle license plate identification report*

VI.3.3.2. *Export XML file*

- Access the system and log in. On the function bar, select the **“Report”**, then select **“Export XML file”.**
- **Statistics by day:**

  Step 1: Select the date and click **"Statistics"** .

  Step 2: Choose location to save the file, by default it is saved on **the Desktop** and click **"Export file"**
- **Statistics by time:**

  Select the time that needs statistics (Start time and end time) and click **“View Report”.**
- **Steps to review statistical data:**

  Step 1: Select the latest report export time

  Step 2: Select the date and shift to view the report
- **Printing report:**

  Click **“Print”** on the left corner of the screen

VI.3.3.3. *Export XML file by day-shift*

VII. COMMUNICATION WITH BACKEND

The toll collection software acts as an intermediary which connects to various ETC - Electronic toll collection - service providers, in order to provide ETC solutions. This approach includes the following features:

- Direct connection to all ETC service providers, allowing payments via ETC (Payment, Reconciliation and Verification);
- Allow customers to check their account status and account balance;
- Automatically switch links between ETC service providers based upon RFID codes;

- Allow to carry out payment verification and reconciliation processes with ETC service providers to ensure transparency, integrity and payment securities.

The toll collection software also connects to various non-ETC payment service providers in order to provide customers the best experience when choosing different payment methods. This approach includes the following features:

- Allow payments via bank cards (Payments, Reconciliation, Verification)
    - Payments can be made with different bank cards: International cards, domestic cards.
    - Diverse payment methods:
        - Licensed transactions by NAPAS: In case of customers use a domestic card (NAPAS) with sufficient fund in the account, the card will be automatically debited from the customer's account with the correct fee amount. On the other hand, in case of customers use a domestic card (NAPAS) with insufficient fund, the account will be overdraft and the overdrawn will be collected in the next time when you top up.
        - Immediate authorised transactions: transactions authorized to debit fee amount immediately once customers have tapped their cards onto the POS device.
- Allow customers to make payments via QR code (Payment, Reconciliation, Verification).
- Support payments via QR codes that comply with VietQR standards.
- Support ETC vehicle registered payments via e-wallets (Payment, Reconciliation, Verification).

VIII. INSTRUCTIONS FOR THE POST-CHECK SECTION

VIII.1. *Post-check for entry lane*

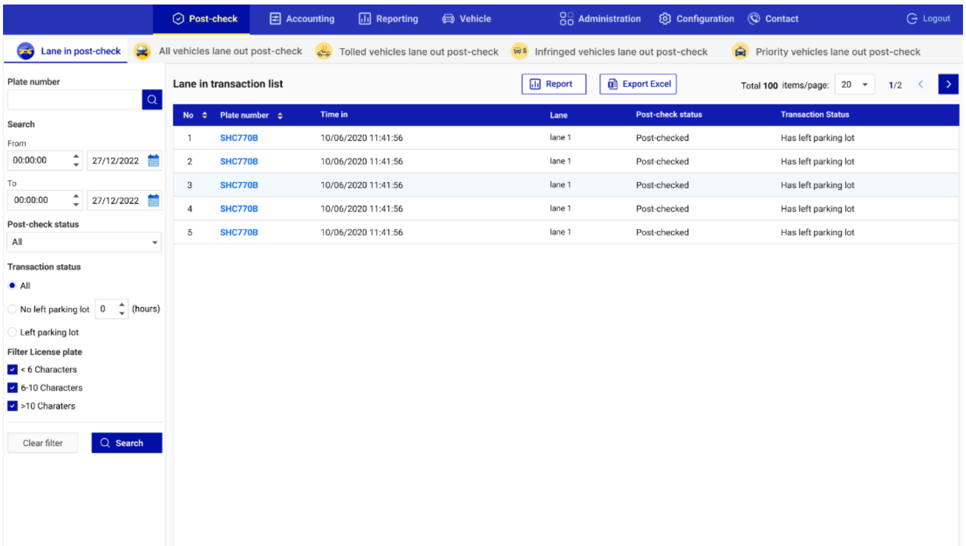
VIII.1.1. *Access the list and search screen*

III.1.1.1 Scope of application

The above function is used when staff want to check information about vehicles passing through the port entrance lane, report and export an Excel list of vehicles entering the port.

III.1.1.2 Implementation conditions

The user of the control system at the station has been created and given an account/password to use the system.



III.1.1.3 Implementation sequence

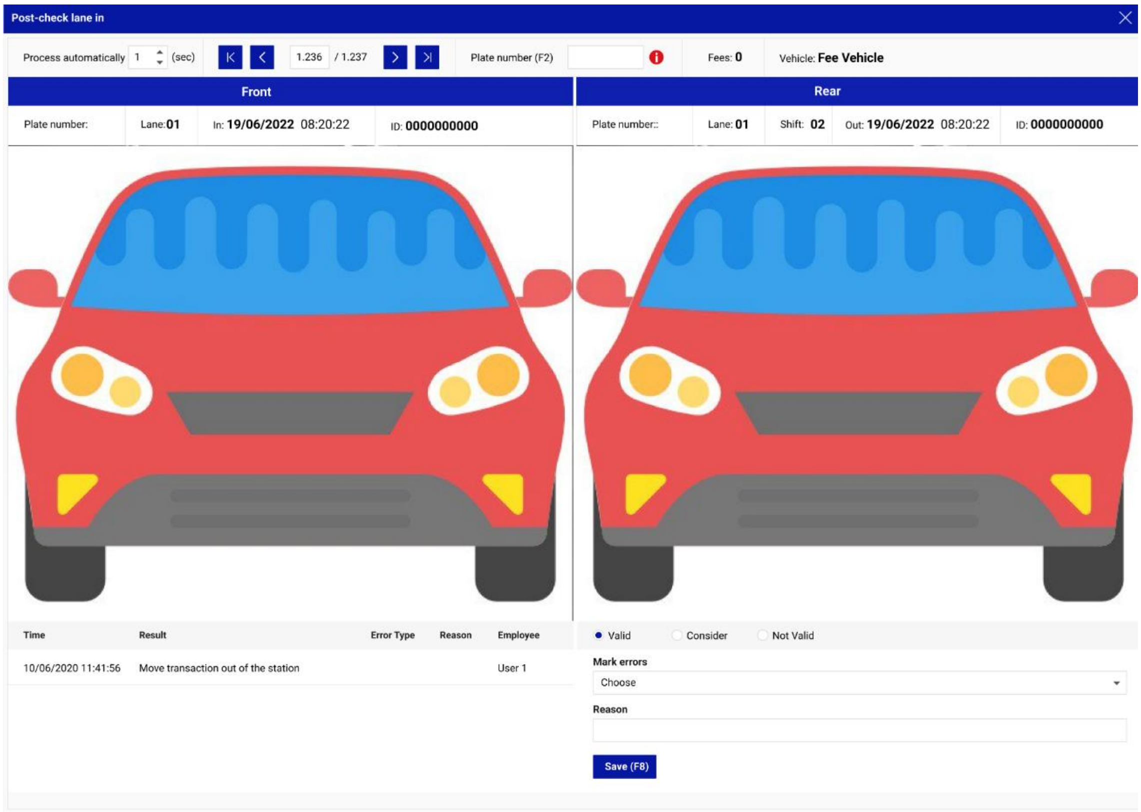
Step 1: On the function bar, select the **"Post-check" menu,** then select the icon in the **"Post-check lane in" section.**

- **Search operation:**
  - In the Search Information section:
    - Enter Vehicle License Plate (Limited to 10 characters)
    - Enter the time period to search in the From date, To date section
    - Post-check status [All - Post-check - Not post-check]
    - Transaction status [Vehicle has left the parking lot - Vehicle has not left the parking lot with the time the vehicle is parked in the parking lot]
    - Filter License plate

- Select the "Search" button, the transaction information you want will be displayed in the list on the right
- Select the “Clear filter” button to change all search criteria

Detailed check operation after checking the entry lane

Step 1: From the post-check transaction list screen, double click on a transaction that needs to be checked, the post-check details screen is displayed as follows:



Step 2: Edit information if there are errors or no license plate information, press F2 key.

Step 3: Select the “Save” button once completed.

VIII.2. *Post-check lane out*

VIII.2.1. *Post-check lane out for all vehicles*

VIII.2.1.1. *Scope of application*

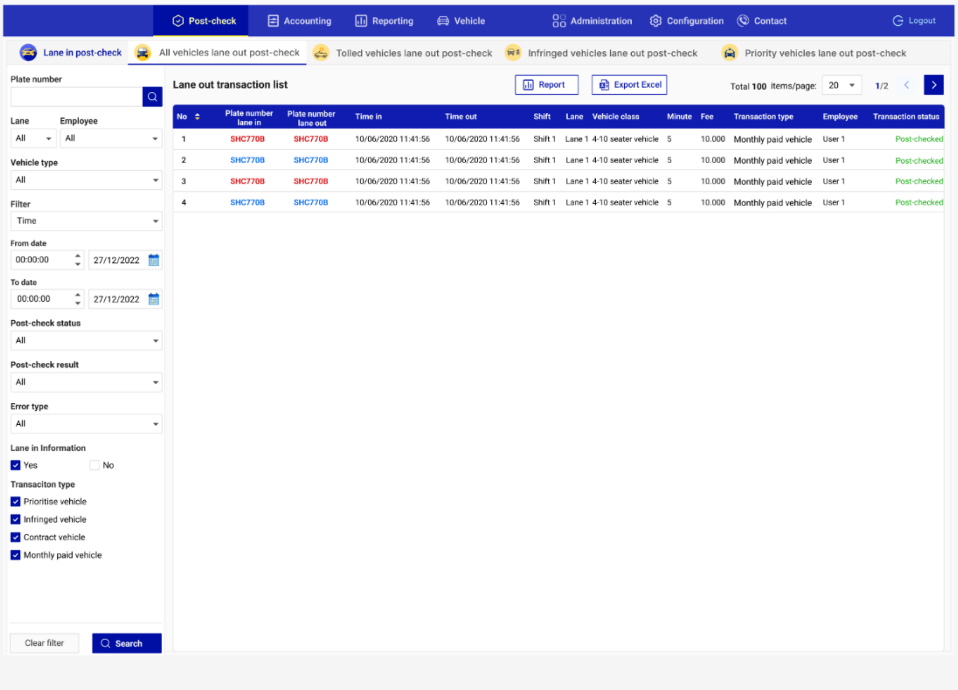
This function is used to check information about toll charges at exit lanes of all vehicle types, report and export transaction lists of all vehicle types to Excel.

VIII.2.1.2. *Implementation conditions*

The user of the control system at the station has been created and given an account/password to use the system.

VIII.2.1.3. *The order of execution*

Step 1: The user selects the **"Post-check" menu** on the function bar, then on the media bar selects **"Post-check lane out for all vehicle".** The system will display the post-check list screen as follows:

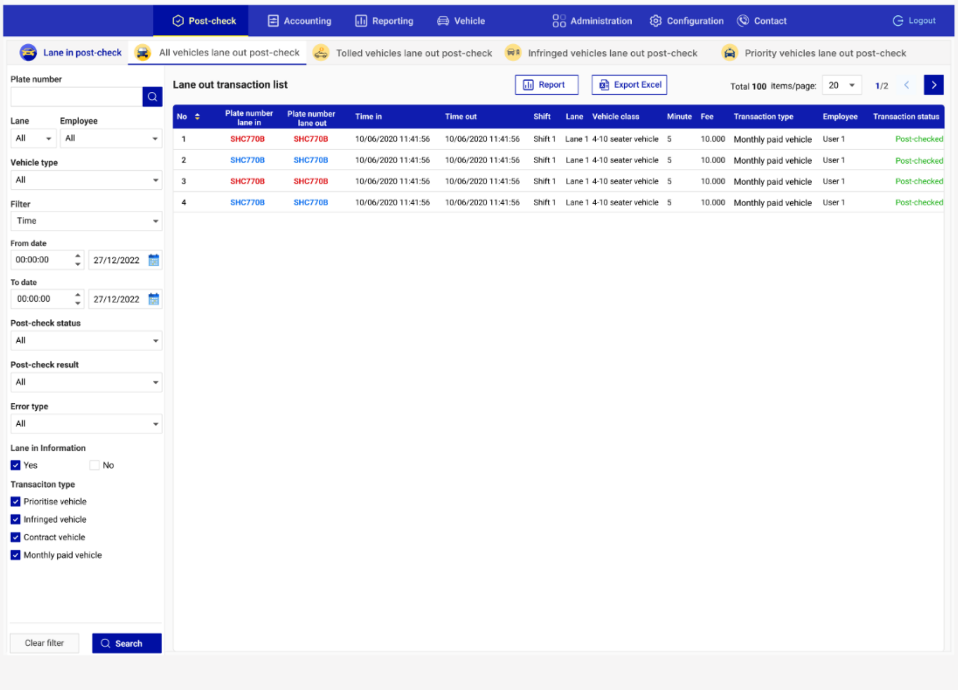


List of all vehicle transactions

Step 2: To be able to find suitable results, users can perform a data search using the filters provided:

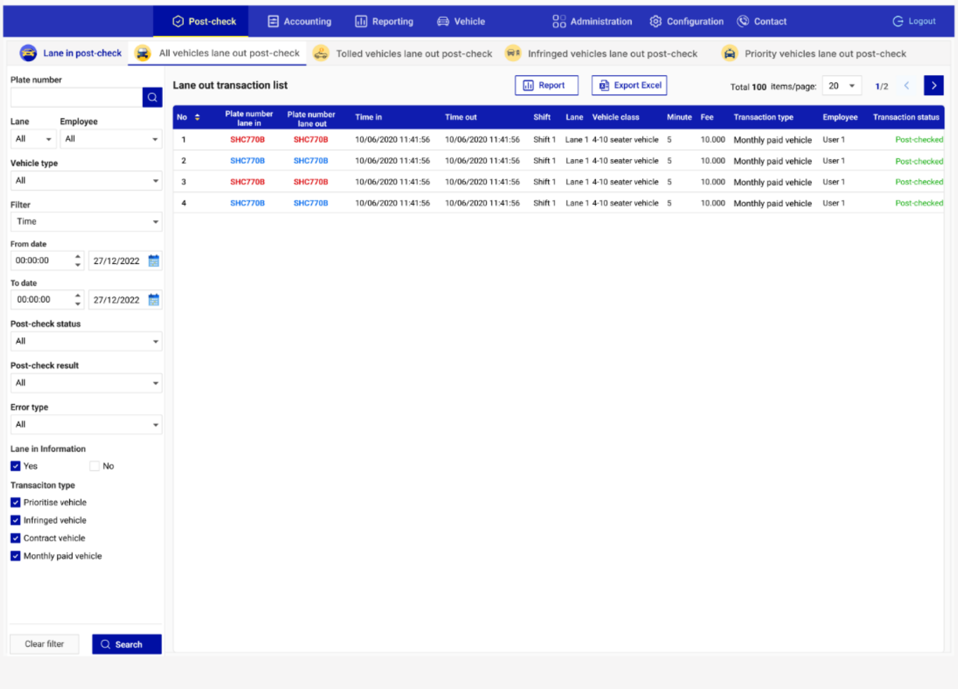
- ***Search information:***
  - ***General Information*** section:
    - Search by **License plate**
    - Search by **Lanes** or **All Lanes**
    - Search by **Cabin operators** or **All Cabin operators**

- Search by **Vehicle Type** or **All Vehicle Types**
- If you select **By Shift,** you will find information by Day and by shifts, or all shifts. The search screen by day/shift with results appears as follows:



Post-test results screen searched by day/shift

- If you select **By time,** you will enter the time period to search in the **From date, To date section.** The time-based search screen with results appears as follows:



Screen of post-test search results over time

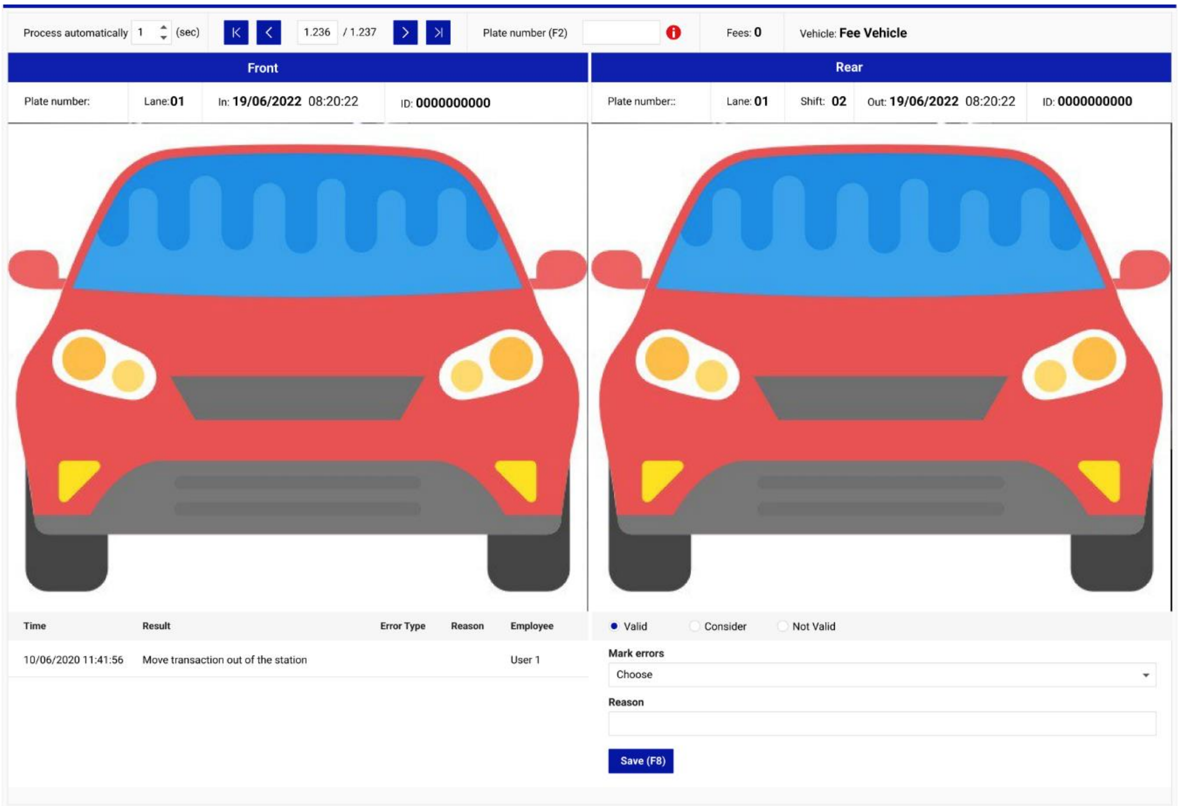
- ***Post-check Status*** section:
  - Search by **All** Results
  - **post-inspected** vehicles
  - Only search for vehicles **that have not been inspected yet**
- ***Post-test results*** section
  - Search by **All** Results
  - **valid** posttest results
  - **invalid** posttest results
    - ♣ **Invalid** post-test results will be reviewed and weighed on **the Error Type**
- ***Error Type*** section:
  - Find transaction information by error types:
    - Selling at incorrect face value
    - Sold wrong number plate
    - Opening priority to the wrong subject
    - Cash collected - no tickets issued
    - Entering the vehicle's license plate incorrectly
    - Error due to toll collection system
    - Number of CSCs lost by customers during the week
    - Other error
- ***Entry lane information*** section:
  - Find vehicle information **with entry lane information**
  - Find vehicle information **There is no entry lane information**
- ***Transaction Type*** section:
  - Find parking information according to the following conditions:
    - **Prioritise vehicle**

- ○ **Infringed vehicle**
- ○ **Contract vehicle**
- ○ **Monthly paid vehicle**

- **Priority vehicle 1 turn/group**

After entering enough search information into the above items, select the **"Search" button,** then the search results will be displayed in the **transaction list table.** Select the **"Clear filter" button** to delete the old selected search criteria.

Action to view transaction details: To see more details about a transaction, we double click on a line in the list, the **Post-check details screen** appears as follows:



IX. INSTRUCTION FOR ACCOUNTING SECTION

IX.1. *List display function*

IX.1.1. *Scope of application*

This function is used when Staffs want to see a list of Staff accounting statements and perform operations to view details and delete statements.

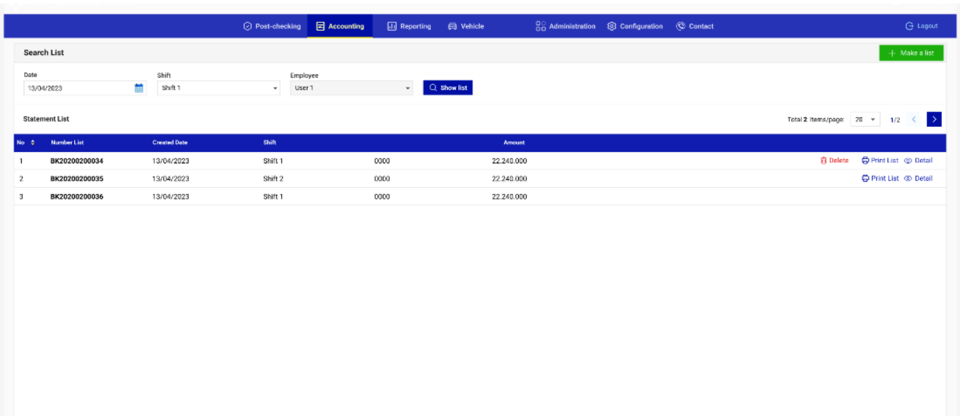
IX.1.2. *Implementation conditions*

The user of the control system at the station has been created and given an account/password to use the system.

IX.1.3. *The order of execution*

Users access the **"Accounting" menu.** The system will display the accounting function interface

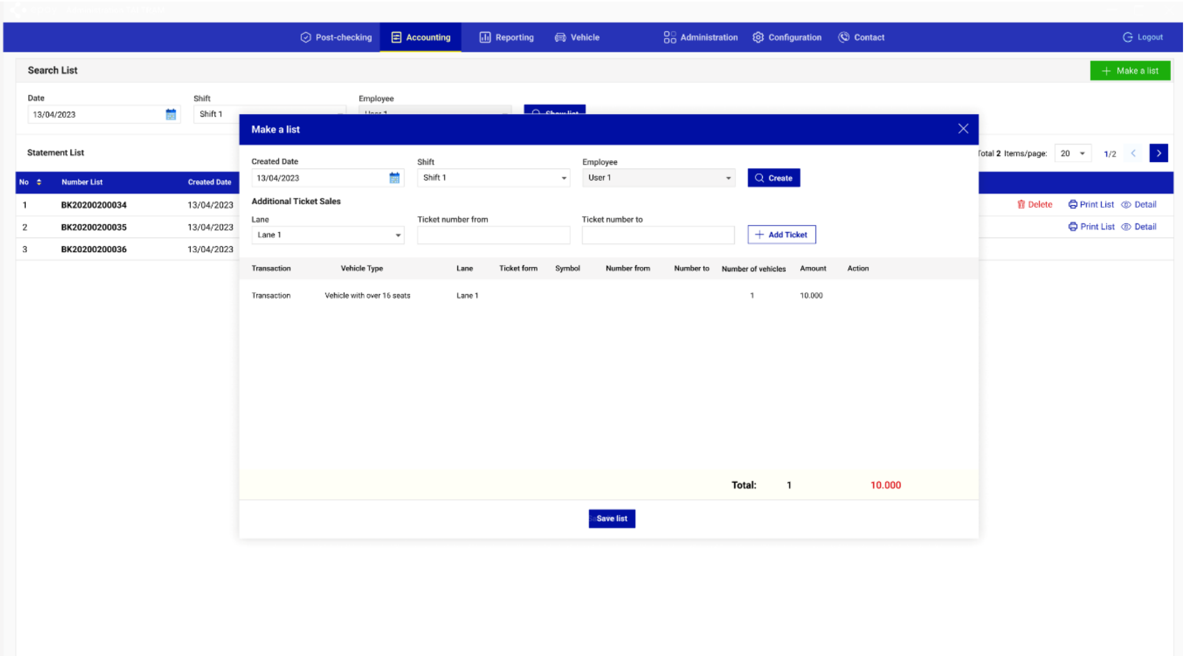
- **Search operation**



- Enter the list search criteria: Date, Shift, Staff
- Select the **"Show list" button** to search the list of lists you just entered.

- **Action to view detailed list:**

Click the **"Details" button** to the right of the list field you want to see details. The screen will display the following window:



The user will then have the choice:

- Click the **"Print List" button** to download the statement to your computer.

Operation of printing the list:

Click the **“Print List” button** to the right of the list field you want to print

Action to delete the list:

Click the **“Delete List” button** to the right of the list field you want to delete. The screen will display a confirmation window as follows:

- Click the **"Delete" button** to confirm deletion of the selected media.
- Click the **“Skip” button** to cancel the operation.

IX.2. *Listing function*

IX.2.1. *Scope of application*

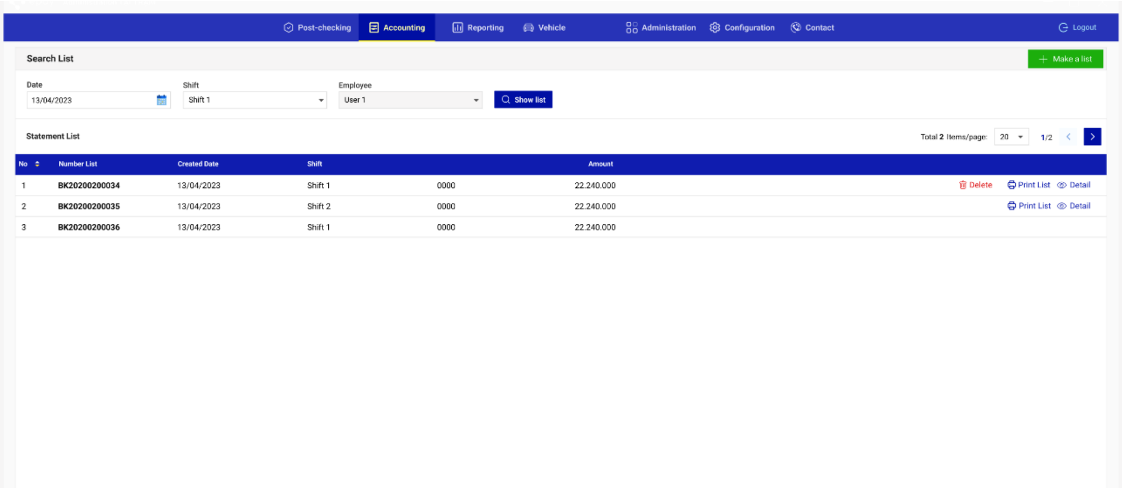
This function is used when Staffs want to view their accounting statements

IX.2.2. *Implementation conditions*

The user of the control system at the station has been created and given an account/password to use the system.

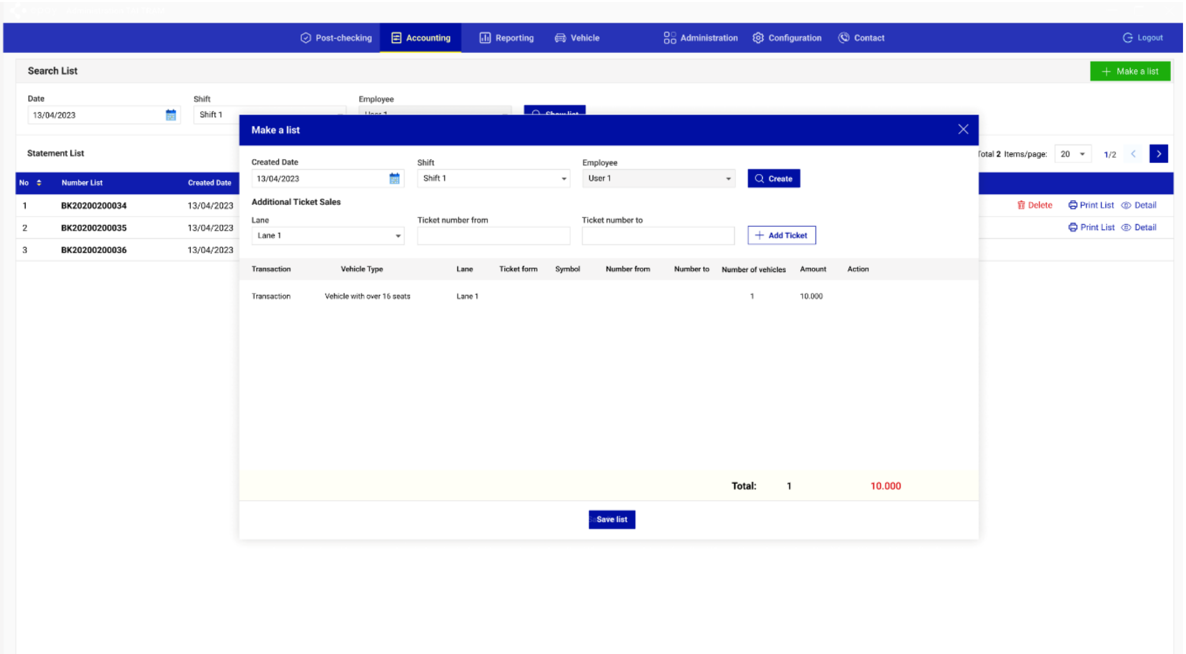
IX.2.3. *The order of execution*

Step 1: Users access the **"Accounting" menu.** The system will display the accounting function interface



Step 2: User selects **"Make a list".** The system will display the list selection screen

Step 3: The user selects the day, shift and Staff who needs to make a statement, then press **"Make list".** The system will display a detailed list



Step 3: In case the user sells additional tickets, select a lane and enter the ticket range from number... to number... sold to record in the list.

- Select the additional ticketed lane

- Enter the ticket range from number ... to number ... for which additional tickets have been sold
- Click the **"Add ticket" button** to add to the list

Step 4: After completing the check, the user presses **"Save list",** the statement information will be saved in the list by the system.