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# USER GUIDE METRICI LPR PARKING MODULE

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## CHAPTER 1 PRESENTATION

License plate recognition – LPR has numerous applications in everyday life, besides the ones that drivers know from relation with the state.

There are many areas where automatic license plate recognition can be used successfully, and all of them rely on the two most important values a LPR system brings: automation and greater security.

**Metrici LPR** software is meant to fix problems in parking, security, retail, and comes with extra advantages of management and reports.

**Metrici LPR** has the goal to eliminate losses for the parking industry, by checking if the car at the exit is the same to the one that got the “entrance ticket”. Plus, **Metrici LPR** has elements to help at a better management of time, space, generates statistics and data; is in fact a development tool.

**Metrici LPR** system can be integrated in a state institution parking, a private company, universities, a transport company, a real estate, retail, traffic management, bus lane enforcement, toll stations .

The main element is the **Metrici LPR Web Interface**. Vehicles recordings, receipts, reports and statistics are accessible in this program and can be accessed from anywhere there is a connection to the internet.

**Metrici LPR Web Interface** will let the user set different actions to be executed when a license plate from database is recognized: can open a barrier, can change a traffic light or can send an e-mail, popup on screen.

**Metrici LPR** can thus be used for a more efficient management of a parking, office buildings, residential area of any size. For a parking for example when entering, the plate is scanned and the time is recorded. When exiting, depending on time spent inside, a cost can be calculated

**Metrici LPR** integrated with parking module allows setting different prices for different situations. For a better understanding of how the system works, we recommend reading the **Metrici LPR User Guide** also.

## CHAPTER 2

# SETTINGS PARKING MODULE INITIATING AND FUNCTIONS

### 2.1 PARKING MODULE- INITIATING

When login to **Metrici LPR Web Interface**, a user can choose in what module to work in : *Default, Parking* or *Toll Station*. Access **Administration –Setup** sub-menu si **Application Type** option (Fig.1)

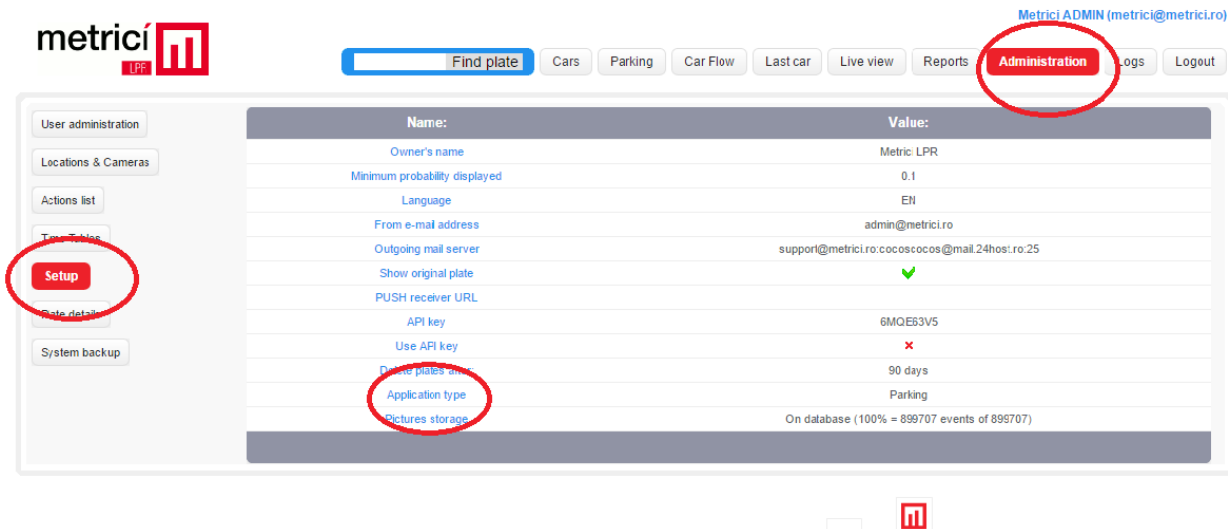


Fig.1

When a new window opens, select **Parking** and push **Submit** button. (Fig.2)

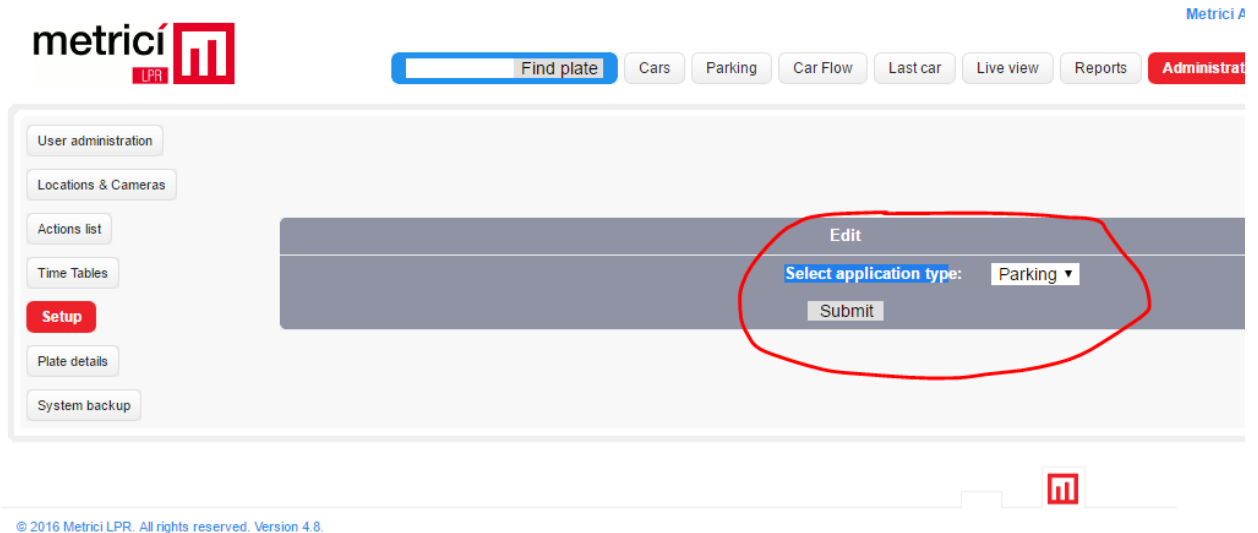


Fig.2

After this, a new tab will appear in the menu bar-  Parking

When first using, one must initiate at least a parking: this can be made in **Administration** menu, **Locations and Cameras sub-menu**, choosing **Add New Location** option.

The system can have as many parkings one wants, and all of them can be managed from same user-friendly interface: **Metrici LPR Web Interface**

## 2.2 EDIT PARAMETERS


After choosing a name for the location, first step is setting the number of seconds in which the system doesn't execute a predefined command in case it detects a license plate twice during that time. For example, if plate B01MET has an entry in database with the command "open barrier" when detected, it is possible that a second camera, placed after the barrier, to try open again the barrier when detected. If we set here a 10 seconds interval between detections, the predefined actions will no longer be executed during that time.

Seconds to suppress action: a number plate will be ignored by other cameras on same location for the seconds set here. For example, it will not open the barrier, will not change the traffic light.

## 2.3 CAMERAS

The button **Add cameras** allows adding new cameras in the system. A name will be chosen, and the system will generate an authentication key – *Authkey*, which will allow secured communication with that camera and will allow access to functions such as live view, car flow etc.

*Camera URL* tab will be filled in with camera's IP, as was set when installed (Fig.3).

 **Open barrier URL** is the IP address of the barrier to be opened when a license plate from action list is recognized (see Chapter 2.7 **Actions List**). The barrier can be replaced with any other device that can execute commands received by IP port: **traffic, warning sign, electronic billboard**

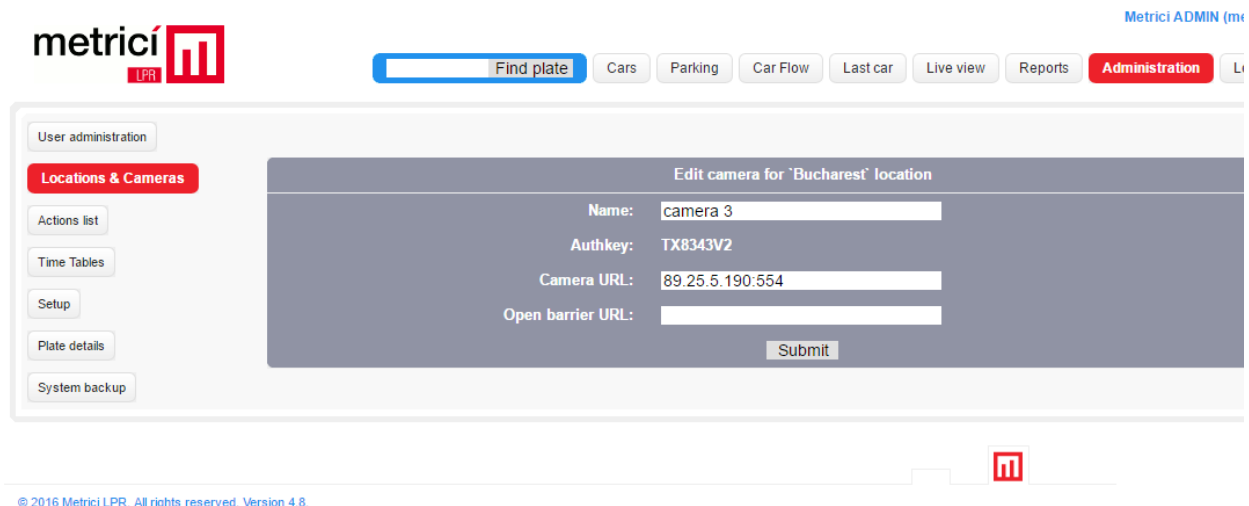


Fig.3

## 2.4 CASH REGISTERS

One can set here more cash registers or can erase old ones. When setting a new cash register, choose a name for it to be recognized by the system, for example Exit Cash Bd. Libertatii.

**Default item name** is the name to be printed on the receipt – for example “Taxa parcare Unirii Parking” (Fig.4)

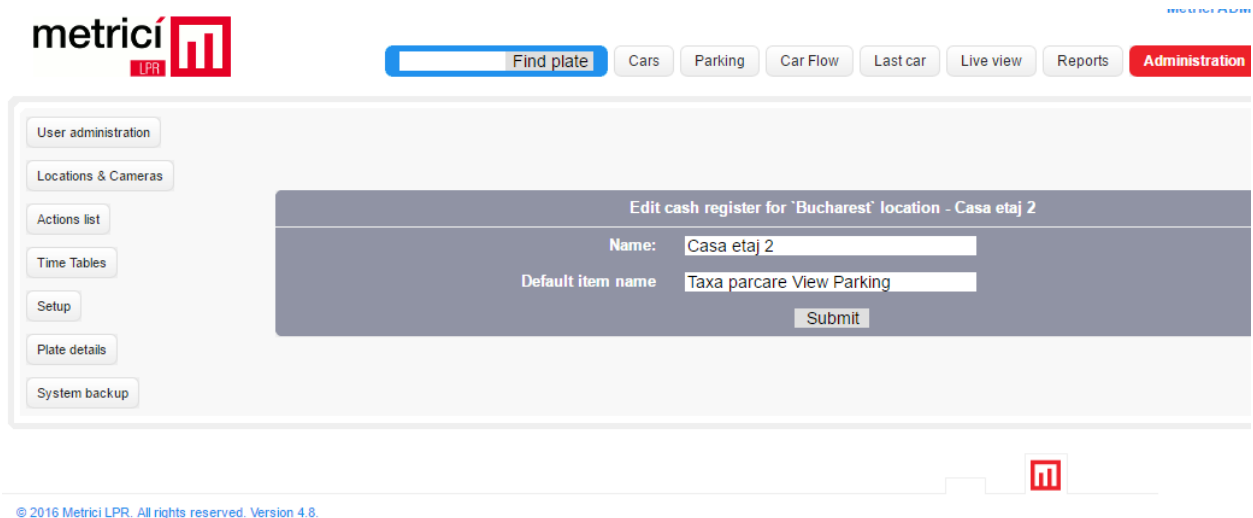


Fig.4

## 2.5 PARKING SETTINGS

- ✚ **Parking Spaces** lets the user set the number of available places. This value will be set at the beginning, but also can be changed any time, in case of expansion or renovations. (Fig.5)

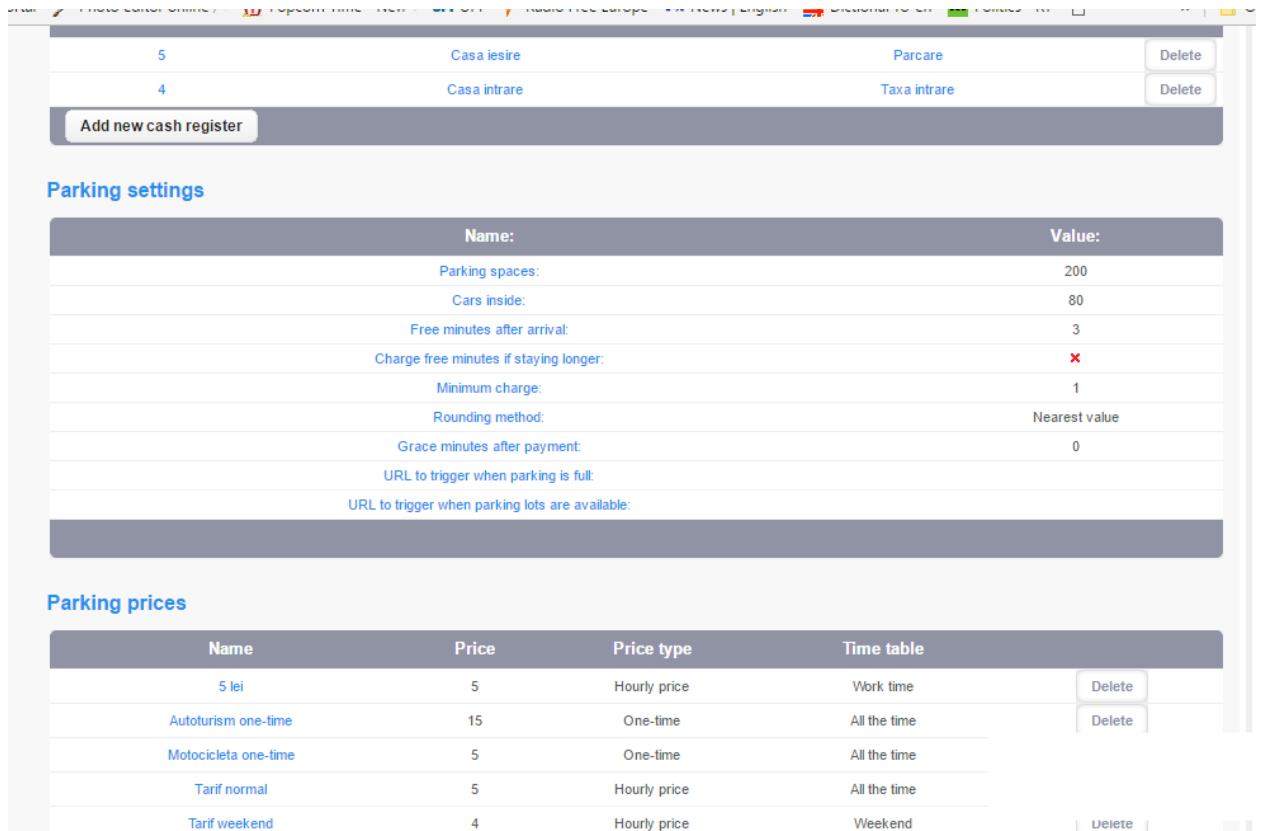


Fig.5

- + **Cars Inside** This value will manually be introduced in system and is meant to tell the program from what number will begin the calculations from. It is very possible that the parking has some clients when installing **Metrici LPR** system, for example 80 cars inside. (Fig.6). If that's the case, we will write this value so that future calculations be accurate regarding free spaces, exits, statistics etc.

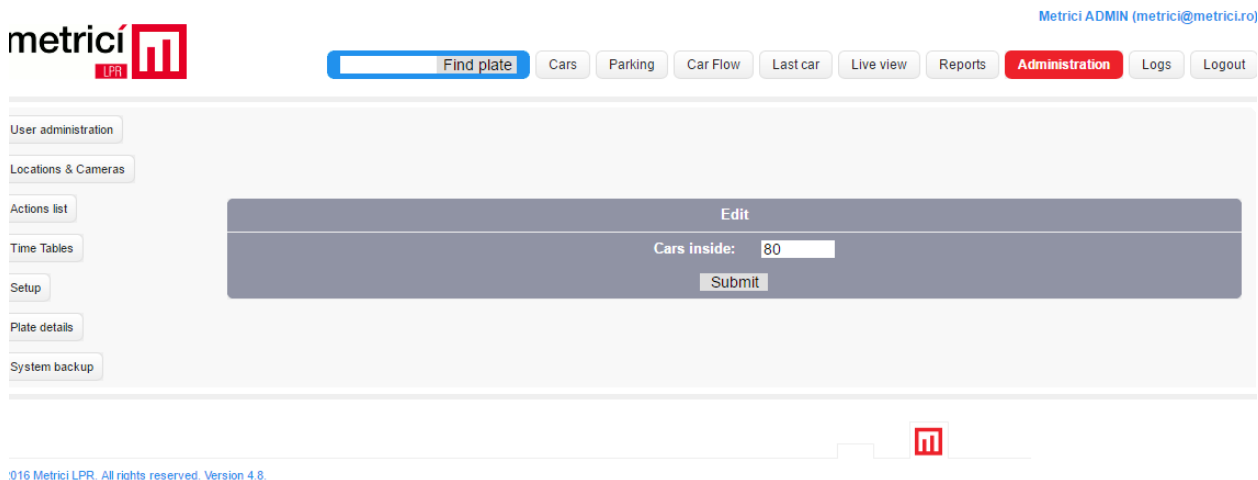


Fig.6

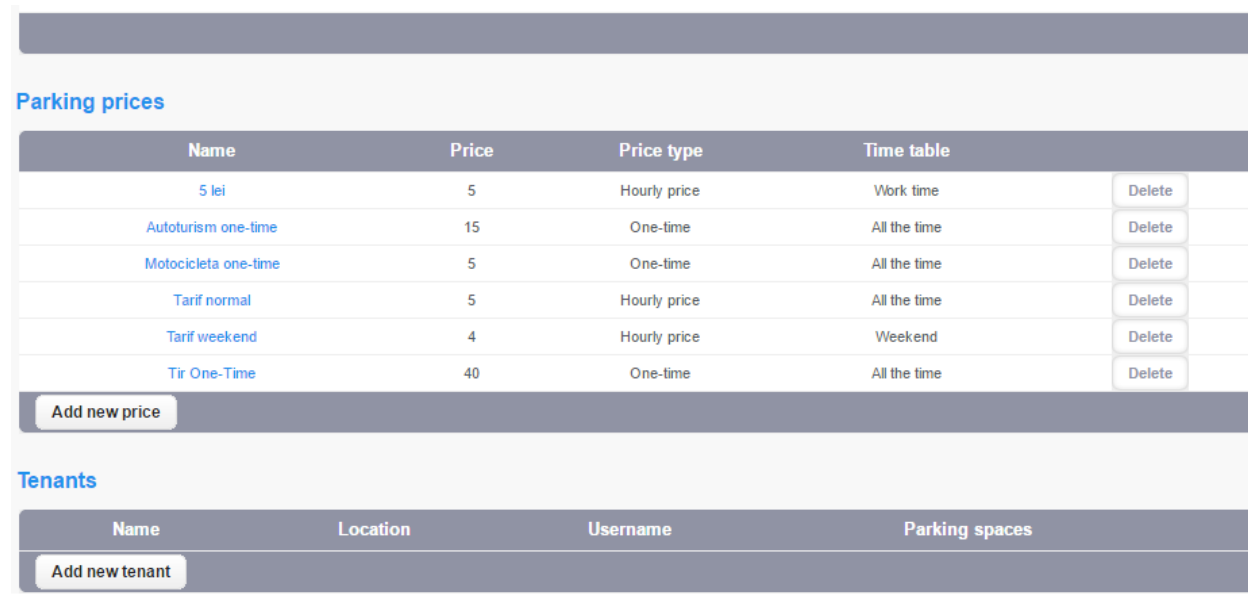
- ✚ **Free minutes after arrival** will represent the time a vehicle has for leaving the parking without payment . This also counts for the next option
- ✚ **Charge free minutes if staying longer.** If this option is checked, even the free minutes from the previous option will be charged. This option is useful and applies in case of rounding up. For example, if a parking has a 15 minutes free interval, in case a client will park for 2 hour 25 minute, and this option is checked, he will pay for 3 hours
- ✚ **Minimum charge** is the minimum price a vehicle must pay no matter how long it would park.
- ✚ **Rounding method** lets the user choose how to make the rounding of time to calculate the receipt. *Nearest value* or *ceiling*. For example a car that stayed 2 hour and 20 minutes will pay for 2 hours in case of *nearest value*, but will pay 3 hours in case of *ceiling*
- ✚ **Grace minutes** is the time interval in which a vehicle can leave the parking after payment.
- ✚ **URL to trigger when parking is full** is an IP address to which **Metrici LPR** sends an impulse. In this case it can change a traffic light or can command an electronic billboard



- ✚ **.URL to trigger when parking lots are available** is an IP address to trigger by **Metrici LPR** when parking is not full.
- ✚ **Preserve tenants spaces:** this option is to be used in parking lots when you want that parking spaces for the tenants to be always available for them and not for the other clients even if they are not occupied. Even if not all the spaces for the tenants are full, the software will not include them in the calculation for available spaces if this option is checked

## 2.6 PARKING PRICES

The option **Parking prices** lets the user choose one or more plans for charging the clients (Fig.7)



**Parking prices**

Name	Price	Price type	Time table	
5 lei	5	Hourly price	Work time	Delete
Autoturism one-time	15	One-time	All the time	Delete
Motocicleta one-time	5	One-time	All the time	Delete
Tarif normal	5	Hourly price	All the time	Delete
Tarif weekend	4	Hourly price	Weekend	Delete
Tir One-Time	40	One-time	All the time	Delete

Add new price

**Tenants**

Name	Location	Username	Parking spaces
Add new tenant			

Fig.7

Each payment method has a name, a price, a type of calculation (hourly, fix, half an hour), the time table in which that plan is on.

In our example, we have a value of 5 lei for every hour spent in parking, a fix plan of 15 lei, no matter how long a car stays, also a payment plan for weekends and a different one for motorcycles and one for TIR.

Our payment plan with the name **Autoturism one time**(Fig.8) is 15 RON, and available in the time table **All the time** and is fix - **one time**, no matter how many hours

a cars stays in parking. The time tables can be changed, in **Administration/Time Tables**.

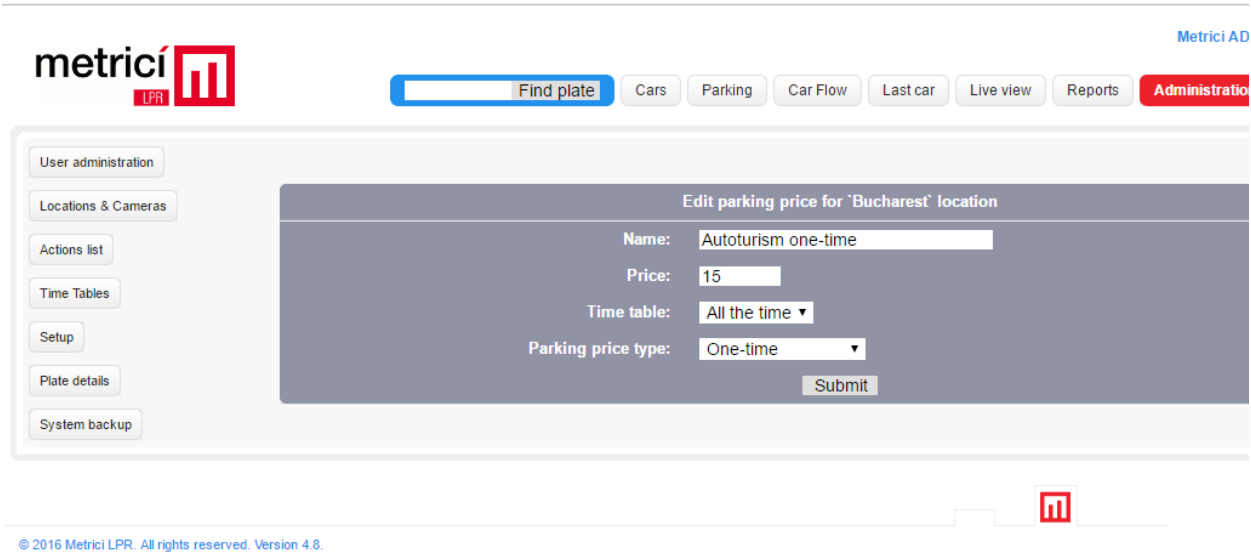
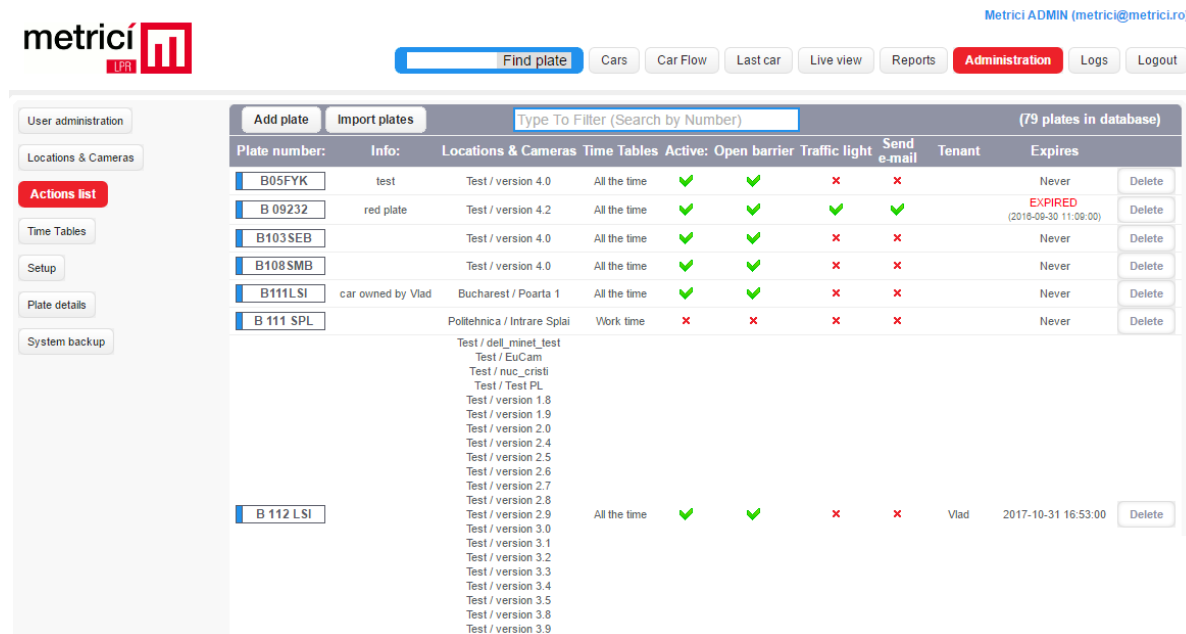


Fig.8

In the example from **Fig. 13**, the car at the exit can be charged with the standard price of 15 lei, or if you calculate depending on time, respectively 5 lei hourly, it will be charged with 20762 RON, as it stayed 111 days in the parking. In this case, the software will calculate how many weekends, how many night hours, legal holidays etc. the car stayed, because one can have a different price for these periods.

## 2.7 ACTION LIST



Metrici ADMIN (metrici@metrici.ro)

Find plate Cars Car Flow Last car Live view Reports Administration Logs Logout

User administration Locations & Cameras Actions list Time Tables Setup Plate details System backup

Add plate Import plates Type To Filter (Search by Number) (79 plates in database)

Plate number:	Info:	Locations & Cameras	Time Tables	Active:	Open barrier	Traffic light	Send e-mail	Tenant	Expires	
B05FYK	test	Test / version 4.0	All the time	✓	✓	✗	✗		Never	Delete
B 09232	red plate	Test / version 4.2	All the time	✓	✓	✓	✓		EXPIRED (2016-09-30 11:09:00)	Delete
B103SEB		Test / version 4.0	All the time	✓	✓	✗	✗		Never	Delete
B108SMB		Test / version 4.0	All the time	✓	✓	✗	✗		Never	Delete
B111LSI	car owned by Vlad	Bucharest / Poarta 1	All the time	✓	✓	✗	✗		Never	Delete
B 111 SPL		Politehnica / Intrare Splai	Work time	✗	✗	✗	✗		Never	Delete
		Test / dell_minet_test								
		Test / EuCam								
		Test / nuc_cristi								
		Test / Test PL								
		Test / version 1.8								
		Test / version 1.9								
		Test / version 2.0								
		Test / version 2.4								
		Test / version 2.5								
		Test / version 2.6								
		Test / version 2.7								
		Test / version 2.8								
		Test / version 2.9								
		Test / version 3.0								
		Test / version 3.1								
		Test / version 3.2								
		Test / version 3.3								
		Test / version 3.4								
		Test / version 3.5								
		Test / version 3.8								
		Test / version 3.9								
B 112 LSI			All the time	✓	✓	✗	✗	Vlad	2017-10-31 16:53:00	Delete

Fig.9

In the menu **Administration**, **Action List** sub-menu, the user can choose preferences for one or more cars. (Fig.9). these can manually be introduced in the system or a list can be imported in .txt or CSV format...

When a license plate is detected, the software checks the **action list** and if that plate is on the list can execute one or more actions: can open a barrier, commute a traffic light, send an e-mail. The user can also establish the time interval for these actions to be active. Each plate can and will have a different time table, actions to be executed etc. For example, a car can only have access in a parking during work time, other one in weekends and so on.

When adding new license plates to Action List, you can choose, for example, that all cars that contain a certain combination of letters/numbers to be included in the same action.

**You must remember that the character“\_” replaces only one letter or number, where “%” replaces as many other characters or even none.**

If you wish that cars that have license plates beginning with letter B to have unrestricted access at the barrier, you will write a formula as B\_\_%. This means that cars with license plate numbers that begin with letter B followed by at least other two characters will have unlimited access.

Any license plates introduced in the Action list may be linked and belong to a group. In such a way it will adopt all the characteristics, settings and rights of that group.

## 2.8 ACTION LIST GROUPS

In Administration - Action list groups, one can create as many groups as it wants. For every group, you need to choose a name, the locations and the cameras where this particular group is active. Also, you may choose the timetables in which this group activates, whether is active or not, what action the program to execute when a member of this group is detected: open barrier, command a traffic light, send an email, show pop-up. At Action URL, you need to fill the address of the hardware it needs to command: barrier, traffic light, display etc.

When new license plates are introduced in database and in action lists you don't need to fill all the data. You may choose a group to belong to and this license plate will automatically adopt all the characteristics of the group. For example: one can have a group for employee, another one for management, guests etc. The Groups can be used when introducing a new license plates in Action List or when introducing new phone numbers in Action List SMS.

## 2.9 TIME TABLES

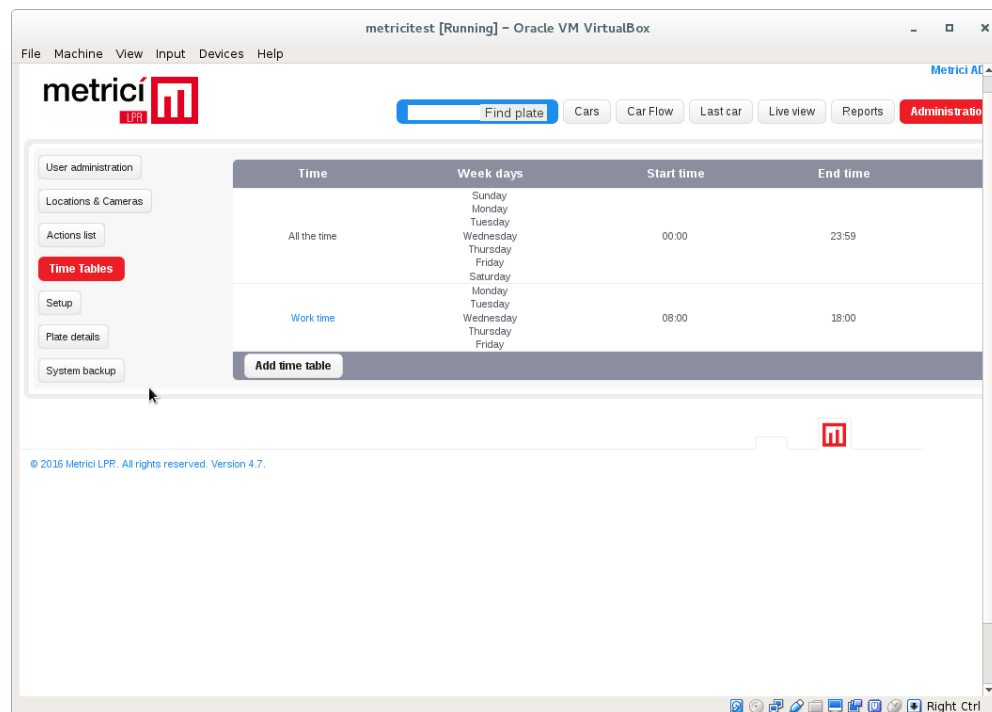


Fig.10

**Administration** menu, **Time Tables** sub-menu will create the time tables for the plates on **Action List**.

The detection soft works non-stop, but one can set working hours for different actions: open a barrier, change a traffic light. Except this predefined time table, set for each action/car, the software will continue to detect license plates, but will not take any action.

For a office building, one can create a time table for working days. Every vehicle on **Actions List** can enter the parking Monday-Friday between 7-22, for example. Outside these coordinates, the barrier will not open. Also this feature is very useful for a paid parking: the administrator can create a timetable for the working hour, another for evening, one for the night, or special timetables for the weekends. It can link then special prices to this timetable and have a more flexible tariff offer.

## 2.10 ACTION LIST SMS

**Administration - Action list SMS.** The user with administration rights may introduce phone numbers in this list for them to grant access in a parking for specific license plates.

The owner of the phone numbers in this list may send a SMS text with a license plate, such as B01MET for example, to a phone number connected to Metricí. On **Hours till expire** tab, the administrator can establish for how long the license plate introduced by SMS has access in the parking, after a SMS was received. If this is left empty, the license plate has unlimited access. The phone number in this list will be introduced in the international format, with the country code, without the “+” character: e.g: 40722222222 or 390143243232.

The phone number in this list is connected to a group. In such a way, you don't need to change all the settings and modify parameters for every user/client/tenant, which has the right to send license plates and introduce them in the Action List.

### Attention!

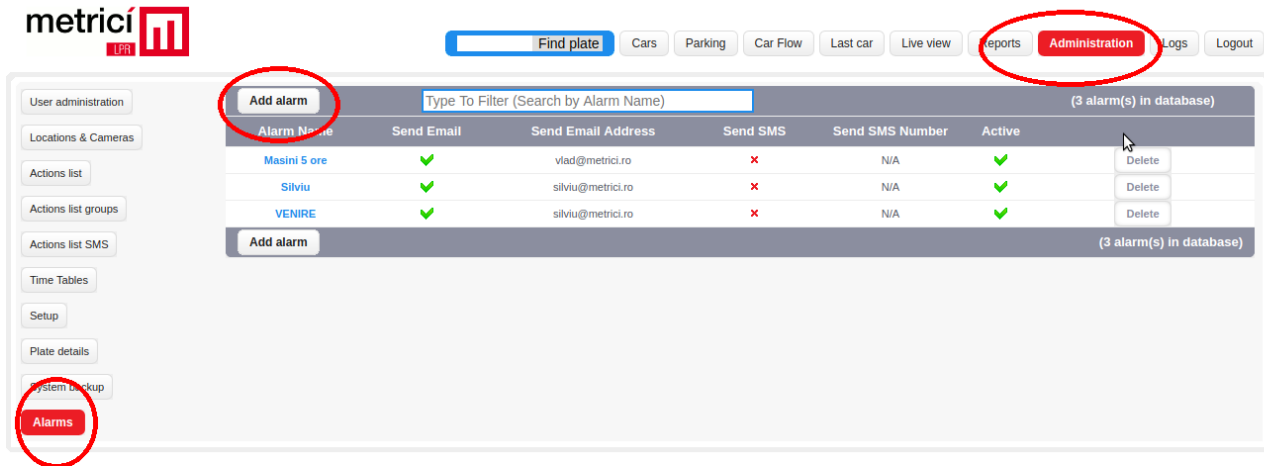
!!!Only phone numbers introduced in this list can grant access with a SMS to other license plates.

## 2.11 TIME TABLES

will allow the user to import a list of license pates, with additional information.

## 2.12 ALARMS

This option lets you establish any numbers of alarms for any location you are administrator of. To add a new alarm, click on the button Add alarm. Here you can choose a name for it, whether is active or not, at what mail or SMS should alert and what the message will be. Fill in and click SUBMIT



Alarm Name	Send Email	Send Email Address	Send SMS	Send SMS Number	Active	
Masini 5 ore	✓	viad@metrici.ro	✗	N/A	✓	Delete
Silviu	✓	silviu@metrici.ro	✗	N/A	✓	Delete
VENIRE	✓	silviu@metrici.ro	✗	N/A	✓	Delete

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After an alarm was set you need to edit: establish for which event is valid and other data.

You need to establish for what conditions the alarm will be activated. Click on Alarm's name and add one or more conditions. First of all you need to establish for what location: Choose ALARM ITEM condition PLATE INSIDE LOCATION with the degree of comparison. For understanding the alarm setting you need to know

"=" sign means that a condition belongs to the established ALARM ITEM

"!=" sign means not equal to, as in this condition doesn't belong to ALARM ITEM you established before

"<" means less than

">" means greater than

## 2.13 ZONES AND LED DISPLAY

Enter Administration - Locations and Camera and choose a location where you want to define zones or floors of a parking lot. Here you can add a new zone or floor of a parking lot by pushing the button Add new zone. After adding a new zone,

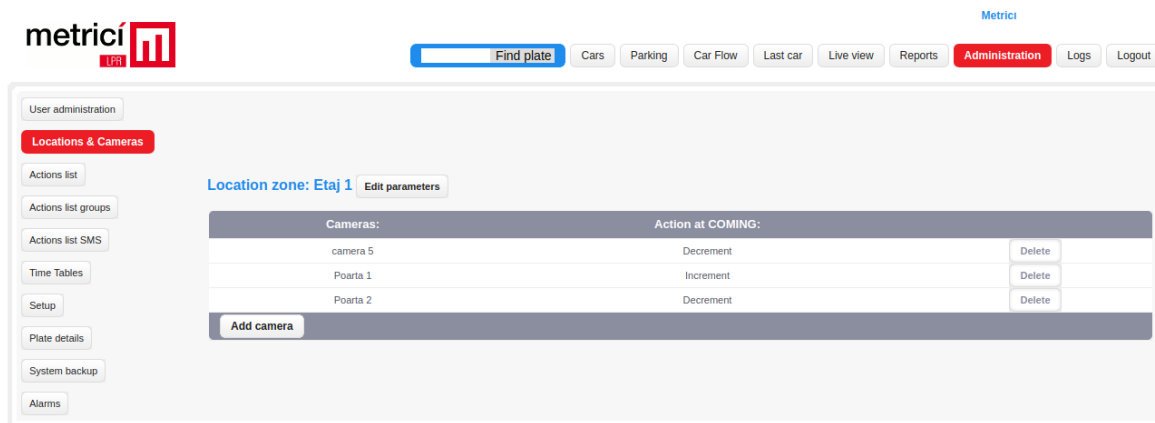
choose a name for it and the number of spaces it holds. In case this zone is connected to a LED Display you can tell what info this would show. For this you will use a code such as #RBUSY #BSPACES3 or #GFREE #FSPACES3

The codes you can use are

- #Y= yellow
- #R= red
- #G= green
- #TSPACES= Total number of parking spaces
- #BSPACES= Number of occupied parking spaces
- #FSPACES= Number of free parking spaces

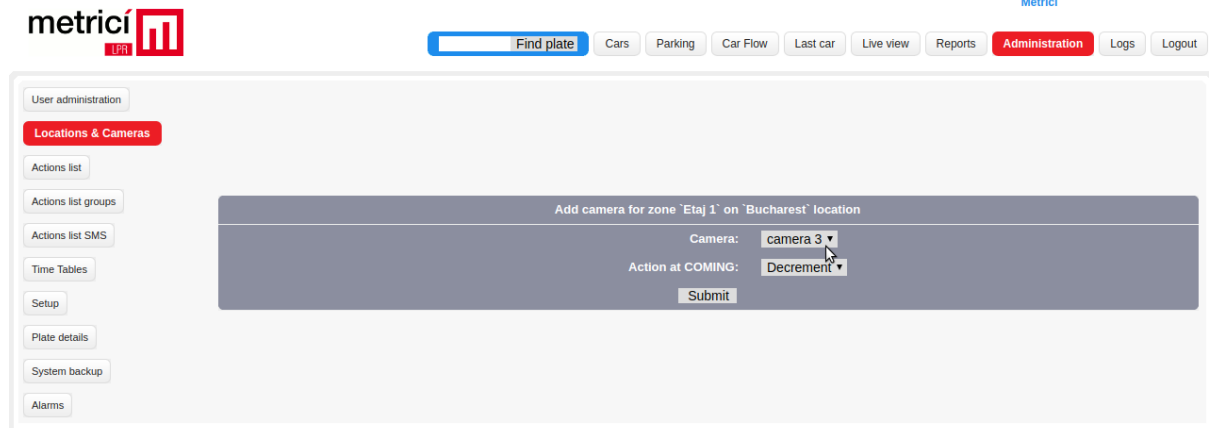
In the code #BSPACES3, the last character (3) is the number of characters in which the info will be displayed - in this case three.

Each zone needs to be connected to cameras for the system to keep track of the vehicle movement. Add a new camera and choose from the list of cameras connected to Metricí server the one that is allocated to that section of the parking lot. Also choose what action to be done when a car is detected. Increment means that a car is added to the total number of cars for that section and for the total parking when a vehicle is detected. Decrement means that one car is subtracted from the total number of cars of that section and parking lot.



The screenshot shows the Metricí LPR Administration interface. The top navigation bar includes 'Find plate', 'Cars', 'Parking', 'Car Flow', 'Last car', 'Live view', 'Reports', 'Administration' (highlighted), 'Logs', and 'Logout'. The left sidebar contains 'User administration', 'Locations & Cameras' (highlighted), 'Actions list', 'Actions list groups', 'Actions list SMS', 'Time Tables', 'Setup', 'Plate details', 'System backup', and 'Alarms'. The main content area is titled 'Location zone: Etaj 1' with an 'Edit parameters' link. It features a table with columns 'Cameras:' and 'Action at COMING:'. The table contains three rows: 'camera 5' with 'Decrement' and a 'Delete' button, 'Poarta 1' with 'Increment' and a 'Delete' button, and 'Poarta 2' with 'Decrement' and a 'Delete' button. Below the table is an 'Add camera' button.

Cameras:	Action at COMING:	
camera 5	Decrement	Delete
Poarta 1	Increment	Delete
Poarta 2	Decrement	Delete



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## CHAPTER 3

# PARKING MODULE FUNCTIONS

### 3.1 CARS INSIDE

Access **Parking** menu, click on the button: the user will see a new window with a list of license plates belonging to the vehicles that are inside the parking. One can choose what camera to watch live. If he wants he can choose a cash register and statistics regarding the cars inside and how many spaces are available.

Under live view window, you can see the last detected plate and a button - **Charge this number** that is a quick link to generating a receipt for that plate. (Fig.11)



The screenshot displays the METRICI LPR v5.1 user interface. At the top right, it says 'Metrici ADMIN (metrici@metrici.ro)'. The navigation bar includes 'Find plate', 'Cars', 'Parking' (highlighted), 'Car Flow', 'Last car', 'Live view', 'Reports', 'Administration', 'Logs', and 'Logout'. The status bar shows 'Location: Bucharest', 'Camera: camera 3', 'Cash register: Casa intrare', 'Parking spaces: 200', 'Cars inside: 94', and 'Free spaces: 106'. Below this, there's a 'Cars inside:' section with a search box 'Type To Filter (Search by Number)'. A grid of license plate buttons is shown, including A0957DD, A3125, A4365MT, AB05RAZ, AB06DTR, AB06STE, AB08CLJ, AB08HSX, AB08KMK, AB08RMY, AB08SDJ, AB08SJD, AB08UWM, AB08YYO, AB08ZZH, AB09ABX, AB09DHH, AB09HIT, AB10DNZ, AB11AXT, AB12WDY, AB19WDY, AB27VJ, AB34EYS, AB37ALP, AB39ABL, AB39ALP, AB46ALP, AB52AUE, AB57RJB, AB60LRH, AB78EYS, AB793AUT, AB82SMI, AB87AUF, AB87RAU, AB89HIT, AB994FXP, AB99COM, AG013846, AG015430, AG017007, AG018105, AG018851, AG019473, AG019744, AG019902, AG019923, AG01KBO, AG01REC, AG01UOV, AG020291, AG020338, AG020364, AG020388, AG020647, AG021005, AG021014, AG021107, AG021121, AG022098, AG022376, AG022657, AG022822, AG023801, AG025816, AG027005, AG02SSS, AG02STA, AG02TBM, AG03BJU, AG03DUM, AG03MDF, AG03PIF, AG03SAM, AG04KBO, AG04LIC, AG04SIR, AG05MCV, AG06ALO, AG06FJM, AG06HKW, AG06LHS, AG06XCR, AG07APY, AG07DPT, AG07JEP, AG07JKU, AG07KWS, AG07PKD, AG07VFX, AG07WAY, AG07ZBW, AG07ZNV, AG08KIO, AG08LXY, AG08PKO, AG08PVM, AG08SOW, AG08TSX, AG08TTB, AG08YNA.

The 'Live view' window shows a camera feed of a car with the license plate 'B 70 RNM' and a 'Charge this number' button. The timestamp is '2016-11-10 12:22:33'.

Fig.11

From the list of cars inside, clicking one of the plates or by searching a specific plate, one can see statistics about it and can print a receipt.

A search for “TL” will generate a list with vehicles registered in Tulcea county, but also plates such as B01ATL or DB89TLV, for example.

**NOTE:** There are cases when a license plate can not be read (is dirty, or there isn't any) and the car must enter the parking. In the box Type to filter (search by number) one can manually write a number and presses Enter.

A new window will open with a green button (*Grant access without payment*) Fig. 12. Click on it: the barrier will open, and the plate is introduced in database. When exiting, a new search for the plate or if the plate is detected by Metrici LPR sends the user to the cash registers

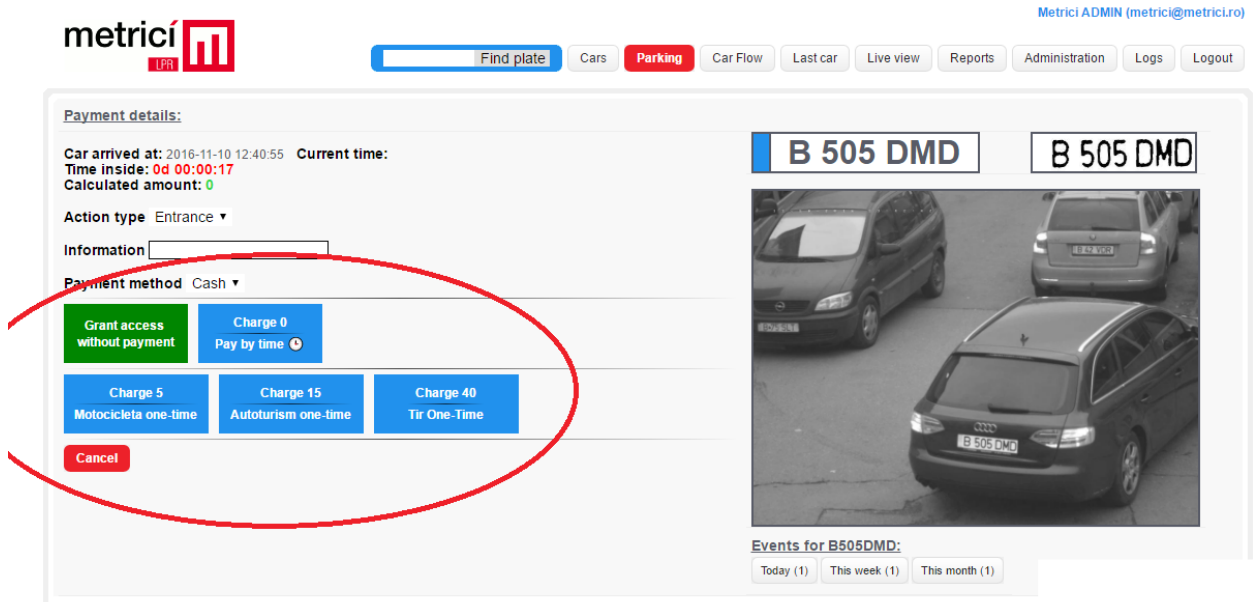


Fig.12

By clicking one of the plates from **Cars inside** list a new window opens such as in the next picture. (Fig.13), that shows a few statistics about the plate.

In our example, we see when the vehicle AG12UDN entered the parking, the date, and time spent inside. Depending on type of calculations a receipt can be printed.

The box **Information** can include an identification code for the company, if the client wishes so.

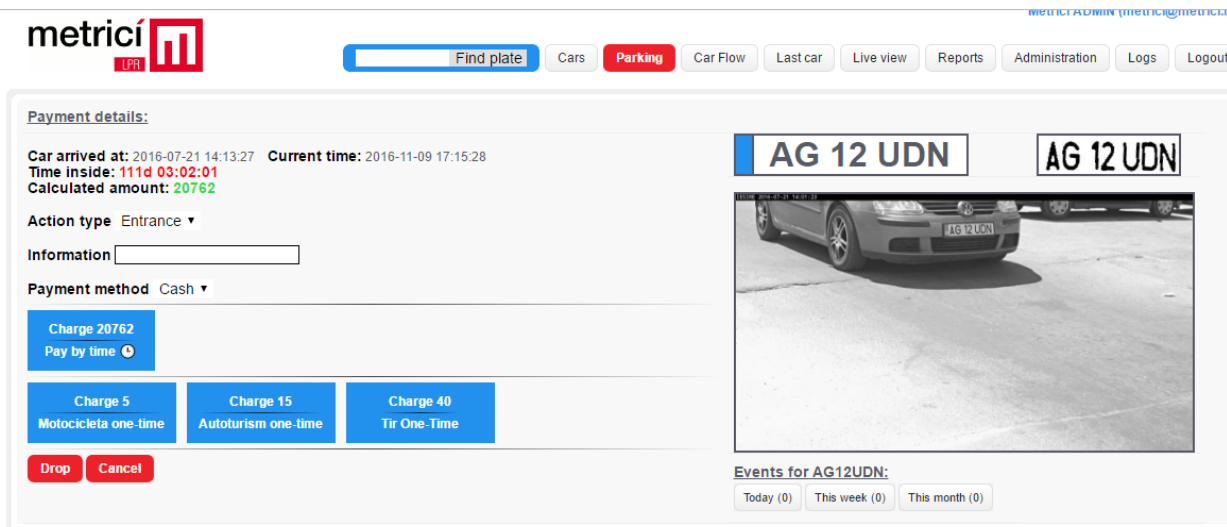


Fig.13

Below the car's picture there are a few links to recent events with the same license plate.

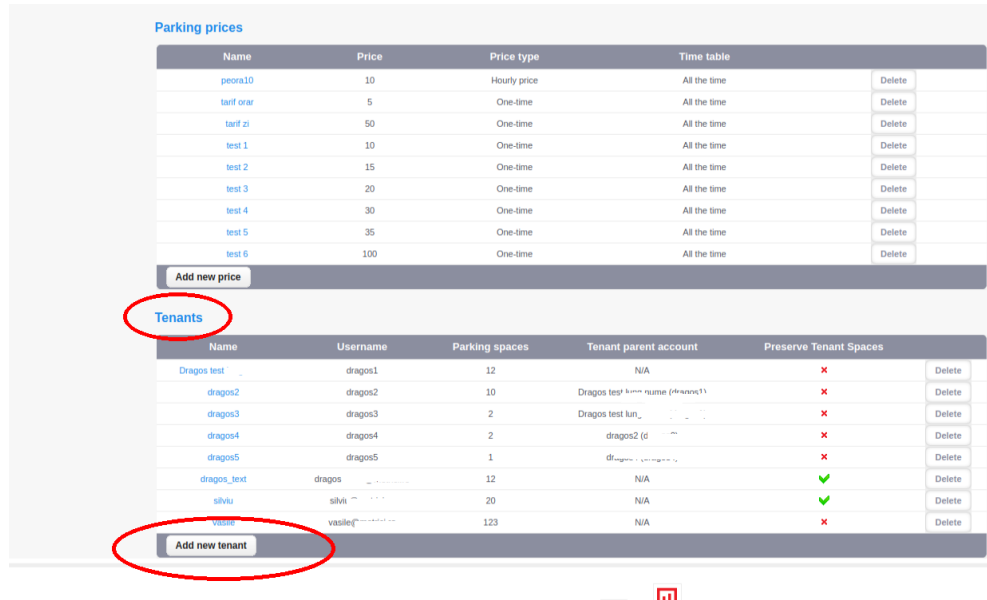
**NOTE** The payment plans can be set in **Administration** menu, **Location and Cameras** submenu. From the list of **Locations**, choose the one for which you want to modify the price (see Chapter 2.6 Parking Prices.)

## 3.2 TENANTS

This category lets you add some “tenants” in database. The spaces for these tenants can be reserved all the time and the software will not count them as available, even if there are some of them empty. The tenants can manage their spaces on their own in a personalized interface. They can manually add cars, delete others, select time tables etc.

For a new tenant to be created, click on “**Add new tenant**”. In the new window, this tenant will get a name, user and password which will be used to login to his account. Also a certain number of license plates will be allocated to his account (see also **Preserve tenants spaces** option). For a tenant to login to his account, access **lpr.metrici.ro/tenants** or click on **Tenants Login** button on login page for **Web Interface**. He can login with the user and password set in the Metrici Interface. When he will introduce a new license plate in his list, it will automatically be saved in **Actions List** in Metrici LPR Web Interface with the option **Open Barrier** checked. The user with

admin rights in Web Interface can change (if he wants) the options for each license plate a tenant introduced, as well as the camera, locations, expiration date ...



Name	Price	Price type	Time table	
peora10	10	Hourly price	All the time	Delete
tarif orar	5	One-time	All the time	Delete
tarif zi	50	One-time	All the time	Delete
test 1	10	One-time	All the time	Delete
test 2	15	One-time	All the time	Delete
test 3	20	One-time	All the time	Delete
test 4	30	One-time	All the time	Delete
test 5	35	One-time	All the time	Delete
test 6	100	One-time	All the time	Delete

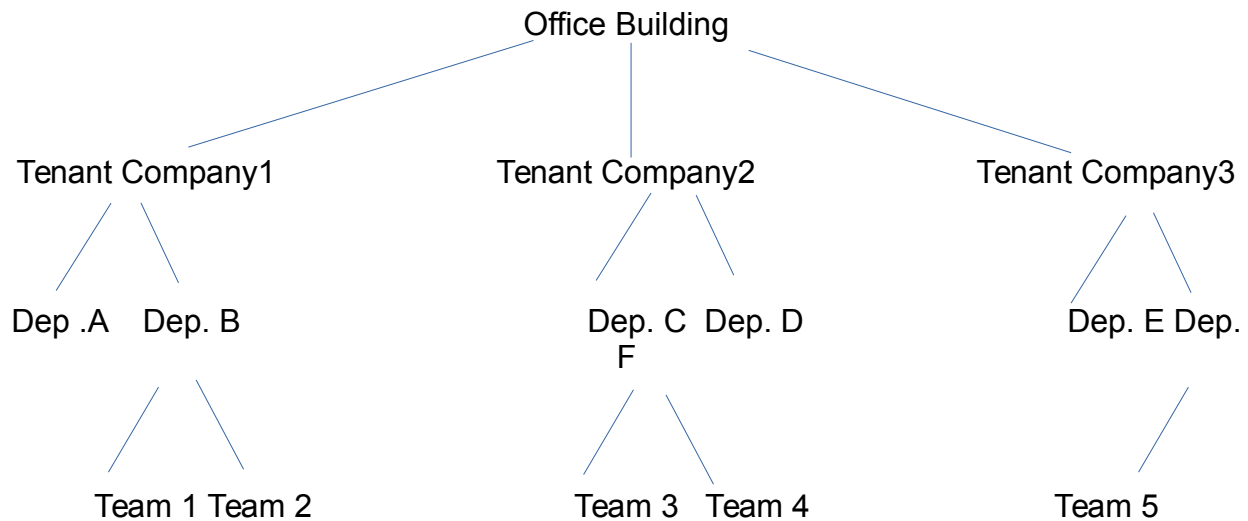
**Tenants**

Name	Username	Parking spaces	Tenant parent account	Preserve Tenant Spaces	
Dragos test 1	dragos1	12	N/A	✗	Delete
dragos2	dragos2	10	Dragos test k... name (f#xoxc3)	✗	Delete
dragos3	dragos3	2	Dragos test kun...	✗	Delete
dragos4	dragos4	2	dragos2 (d...	✗	Delete
dragos5	dragos5	1	dragos...	✗	Delete
dragos_text	dragos	12	N/A	✓	Delete
silviu	silviu	20	N/A	✓	Delete
vassie	vassie	123	N/A	✗	Delete

**Add new tenant**

Add new tenant , choose a name, as well as a username and password. These will be used to enter its own interface where can manage the vehicles, timetables, license plates etc. Define the number of parking spaces this tenant is entitled to and whether to preserve them. In case this option is chosen, the spaces will always be reserved for that tenant only and never be considered as empty and displayed as such, even if not all the cars are inside the parking. These preserved spaces will always be considered as BUSY, being only at the disposal of the tenant.

The last option to choose is whether this tenant is a parent or a child. Each tenant can create its own sub-tenants. For example an office building can have as tenants all the companies which rented offices inside, each one with a certain number of allocated spaces. Each company can create another sub-tenants for its own departments. A department may become a parent tenant for another teams inside the department and so on. As in a scheme such as

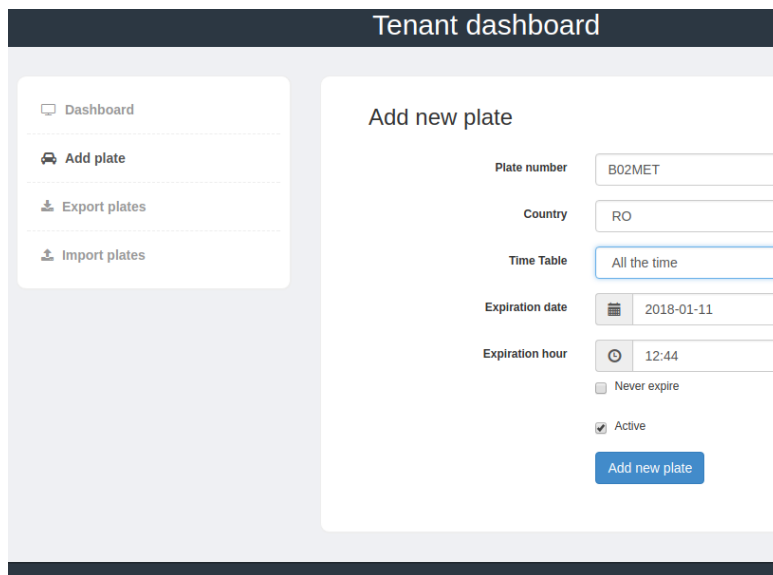


So at the option Tenant parent account you choose none if this is a parent company or pick from the list the one it belongs to if it is a child. In our example, we would choose Dep. B as the parent of the Team 1 tenant, and Dep. B as a child of Company 1.

The user with administration rights can also edit the settings of a tenant: add cars, delete cars. Also, can delete a tenant in which case all his vehicles in action list will also be deleted.

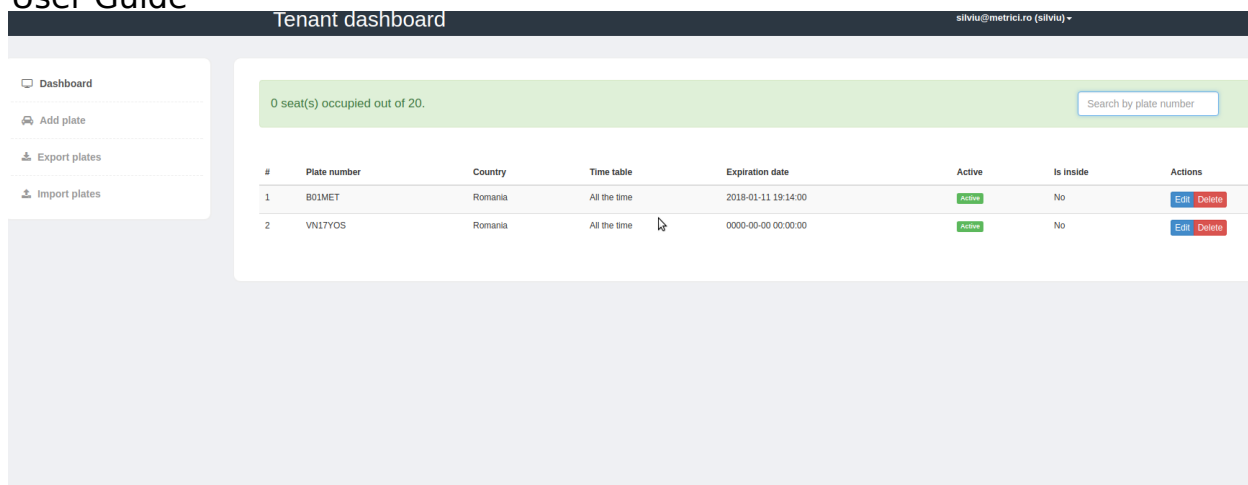
Important!!!

For the system to correctly calculate the spaces inside a parking lot, you can not choose Preserve spaces for a child if this option is not activated to its parents. Also, the number of spaces for a child must be equal or less than a parent.



Each tenant and sub-tenant has its own interface where it can

manage the license plates



Tenant dashboard

silviu@metrici.ro (silviu)

0 seat(s) occupied out of 20.

#	Plate number	Country	Time table	Expiration date	Active	Is inside	Actions
1	B01MET	Romania	All the time	2018-01-11 19:14:00	Active	No	<a href="#">Edit</a> <a href="#">Delete</a>
2	VNI7YOS	Romania	All the time	0000-00-00 00:00:00	Active	No	<a href="#">Edit</a> <a href="#">Delete</a>

Dashboard

Add plate

Export plates

Import plates

Choose Add New Plate to introduce a license plate in database. Fill the license plate number, country and choose the timetables in which this particular number has the right to park/enter. If this is the case you can pick an expiration date after which the license plate will not have access anymore: its rights will be revoked.

## NOTE

Each tenant is connected to a specific location. A group can be linked to several locations and cameras. Also you should remember that same plate number can be introduced in database by more than one user or tenant. This is due to the fact that a plate number can have more settings depending on location/ camera/ tenant etc.

## 3.3 FREEFLOW PARKING ACCESS. EXIT TARRIFS

There is a chance that the administrator of a parking lot to let a free access in the parking for any vehicle but to tax at the exit only one of them: for example the ones without a subscription or others which did spend more time that a established value.

This is the case of a mall, commercial centre for example. In such a case any vehicle can enter the parking and the barrier will open at the detection, not only for the vehicles on a White list/ Action list as it is named in **Metrici Web Interface**.

So any vehicle has free access and can exit without problems (the barrier will automatically open) if it stays a time shorter than the one predetermined in the setting

“Free minutes after arrival” . If the time is longer, the barrier won't open and that particular number plate must pay the stay.

In case of a mall that has free access and free parking for up to 2 hours, any car can enter and exit and the barrier opens during this interval without any condition. Over this interval and period of time, the vehicles will pay.

In case the car at the entrance has a number plate that could not be detected or is missing, a human operator will fill in the number.

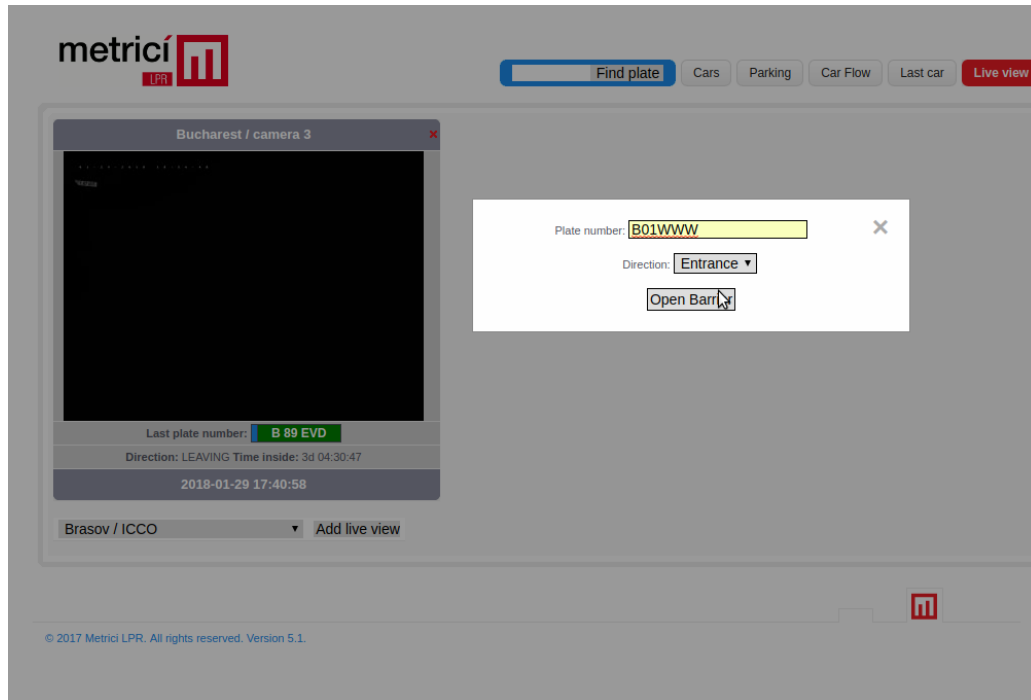
In Live view menu, click on the image and a message open barrier and popup will appear, as in the next image.



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In the new window that pops up, the number plate will be introduced, the movement direction and click on Open Barrier.

In case of exit of a car with no visible number plate same steps will be followed.



## NOTE

For the free access in a parking for any vehicle, a special condition will be added in the Action List with a number plate.

You will enter in the menu Administration – Action list – and click on Add plate.



metrici ADMIN

Find plate Cars Parking Car Flow Last car Live view Reports Administration

User administration Locations & Cameras

Actions list Actions list groups Actions list SMS Time Tables Setup Plate details System backup Alarms

Plate number:	Info:	Locations & Cameras	Time Tables	Active:	Open barrier	Traffic light
B 01 MET		Bucharest / camera 3 Bucharest / camera 4 Bucharest / camera 5 Bucharest / Poarta 1 Bucharest / Poarta 2	All the time	✓	✓	✗
B01NOU		Bucharest / camera 3	Weekend	✓	✓	✓
B01TTX	asdsad	Brasov / ICCO Bucharest / camera 3 Bucharest / camera 4	All the time	✓	✓	✗
B01WWW		Bucharest / camera 3 Bucharest / camera 4 Bucharest / camera 5 Bucharest / Poarta 1 Bucharest / Poarta 2	All the time	✓	✓	✗
B01WWW		testpixio / c1	All the time	✓	✓	✗
B02WWW		Bucharest / camera 3 Bucharest / camera 4 Bucharest / camera 5 Bucharest / Poarta 1 Bucharest / Poarta 2	All the time	✓	✓	✗
B04MET		Bucharest / camera 3 Bucharest / camera 4 Bucharest / camera 5 Bucharest / Poarta 1 Bucharest / Poarta 2	All the time	✓	✓	✗
B05FYK	test	Brasov / ICCO Bucharest / camera 3 Bucharest / camera 3	All the time	✓	✓	✓
B05MET		Bucharest / camera 3 Bucharest / camera 4 Bucharest / camera 5 Bucharest / Poarta 1 Bucharest / Poarta 2	All the time	✓	✓	✗

The next step is to add a number plate such as % (any number plate, as many characters ) or something like B% - this means any car with a number plate starting with B followed by as many characters will have free access. It is mandatory to click on Open Barrier option and if it is the case a Time Table or if it will send alerts.

In case one wants that only vehicles from a specific country have special rights and access you will choose that state/states in the detection engine in Control Panel.

**Attention!!! This condition will be chosen for the camera at the entrance, not for all cameras in the location.**



Find plate Cars Parking Car Flow Last car Live view Reports Administration

**Add plate into the Actions list**

Plate number:

Info:

Group:

Locations & Cameras:

Time Tables:

Expiration date:

Active:

Open barrier:   
Traffic light:

Send e-mail:

Address:

Message:

## CHAPTER 4

### PARKING MODULE REPORTS

When **Metrici LPR Web Interface** is in *Parking* module (see *Chapter 2*), the **Reports (Fig.14)** menu will have some more data comparing to *Default* module.

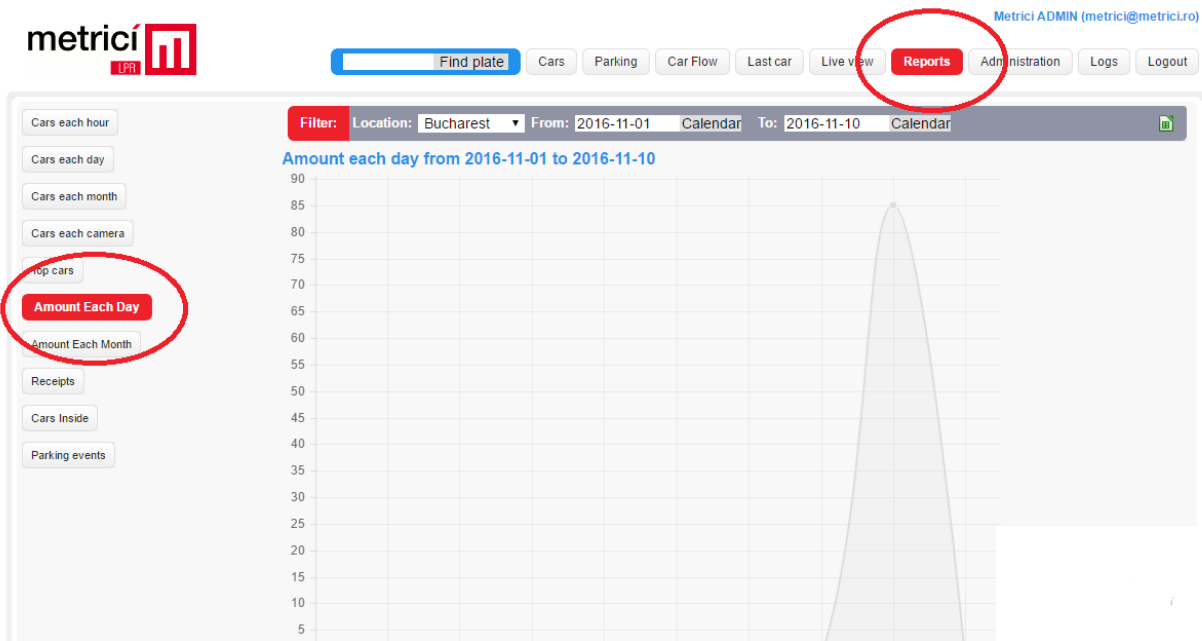


Fig.14

**4.1 AMOUNT EACH DAY**- will show a chart with total income in each day of a time interval for the selected location

**4.2 AMOUNT EACH MONTH** – the report will show a comparison for the income by month for an interval you choose, or for the current year in default setting (Fig.15)

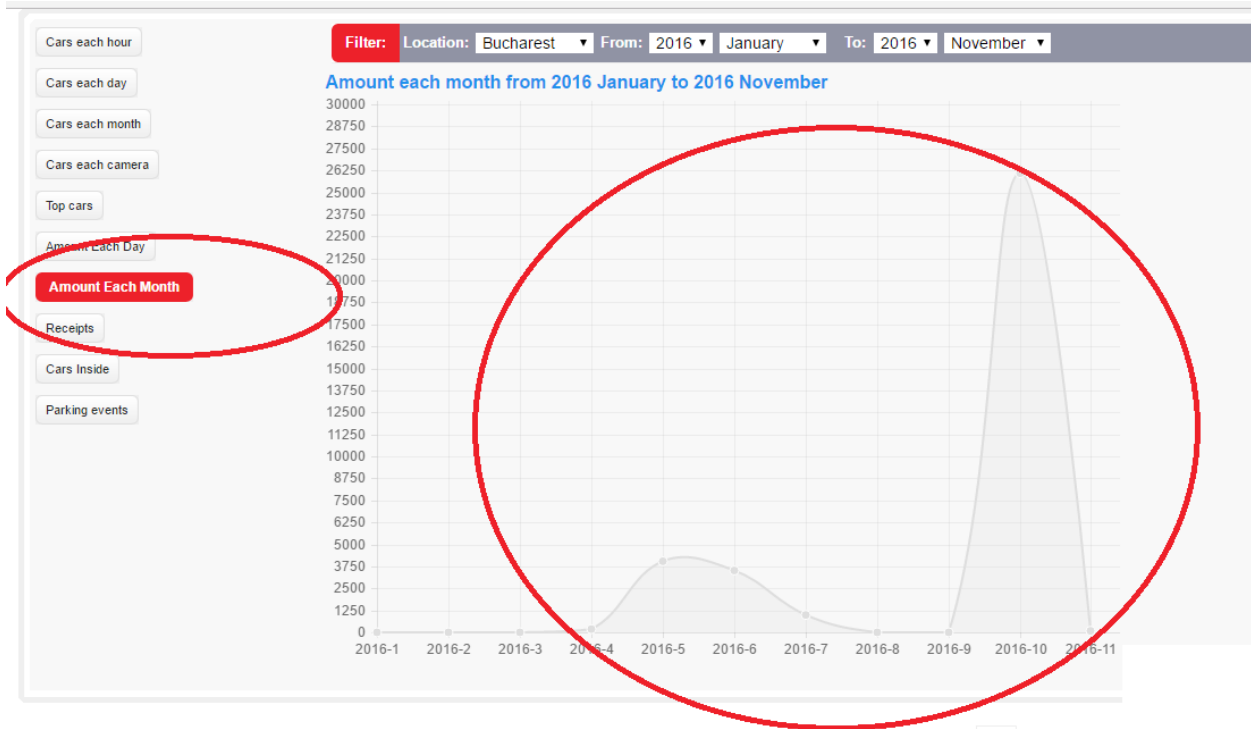


Fig.15

**4.3 RECEIPTS**– This will generate a list with the receipts it generated, the license plates, the date and time, number of the receipt, location, the cash register, the payment method (cash or card), the amount. (Fig. 16)

Plate Number	Information	Receipt Day	Receipt Hour	Receipt ID	Location	Cash Register	Payment Method	Value
AG 12 JZX		2016-11-09	16:48:31	102	Bucharest	Casa intrare	Cash	40
AB06URS		2016-11-09	17:13:30	103	Bucharest	Casa intrare	Cash	40
AG 12 UDN		2016-11-09	17:20:15	104	Bucharest	Casa intrare	Cash	5
AG 015430		2016-11-10	12:34:25	105	Bucharest	Casa intrare	Cash	15
B 177 TMB		2016-11-11	16:38:45	106	Bucharest	Casa iesire	Cash	15
<b>Total: 115</b>								

Fig.16

**4.4 CARS INSIDE** generates a list of cars that are currently inside the parking, along some statistics. The chart will show the license plate, the moment of arrival, the current date and the calculations for number of hours inside (Fig. 17)

**4.5 PARKING EVENTS** is a new way to see the cars flow in parking.

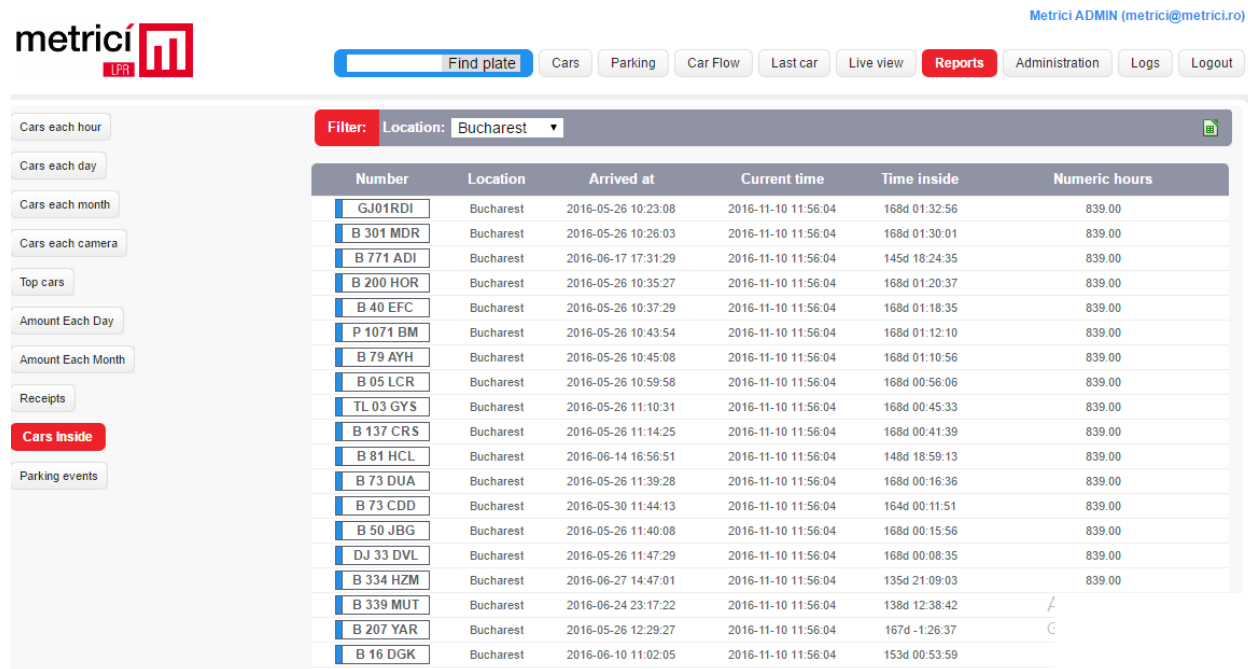


Fig.17

These reports are a plus to the statistics included in the standard menu– *Default* of **Metrici LPR Web Interface**.

**Cars each hour** report shows the total number of cars and unique cars detected in a location.

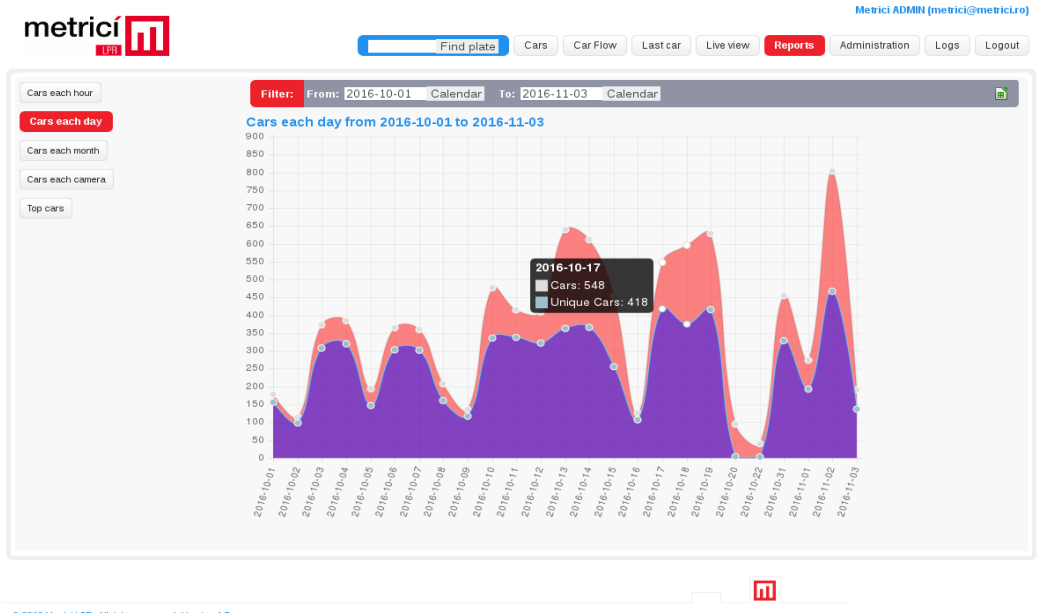


Fig.18

Another possible reports are the number of cars organized by days, by months, a comparison for selected cameras or what are the cars with the most events– **Top cars (Fig19)**.

Filter: From: 2016-11-01 Calendar To: 2016-11-03 Calendar Max. results: 20

Plate number:	Country:	Total events:	Today events:	This week events:	This month events:	Actions list:
B 30 HUZ	RO	35	0	35	35	Add
B 56 LMG	RO	29	0	29	29	Add
B 77 BPS	RO	28	0	28	28	Add
B 74 EFW	RO	25	0	25	25	Add
B 225 BPS	RO	25	0	25	25	Add
BZ 43 RVR	RO	19	0	19	19	Add
IL 02 VNC	RO	18	0	18	18	Add
B 281 BLO	RO	11	0	11	11	Add
B 56 UVB	RO	11	0	11	11	Add
B 52 WRB	RO	10	0	10	10	Add
B 13 ZMZ	RO	9	0	9	9	Add
B 32 WKP	RO	9	0	9	9	Add
B 041524	RO	8	8	8	8	Add
B 777 MEK	RO	7	0	7	7	Add
B 75 SLW	RO	7	0	7	7	Add
B 43 RPO	RO	6	6	6	6	Add
B 500 OIT	RO	6	0	6	6	Add
CL 10 YMB	RO	6	1	6	6	Add
B 56 JNH	RO	5	0	7	5	Add
B 45 RRT	RO	5	0	5	5	Add

Fig.19

## CHAPTER 5

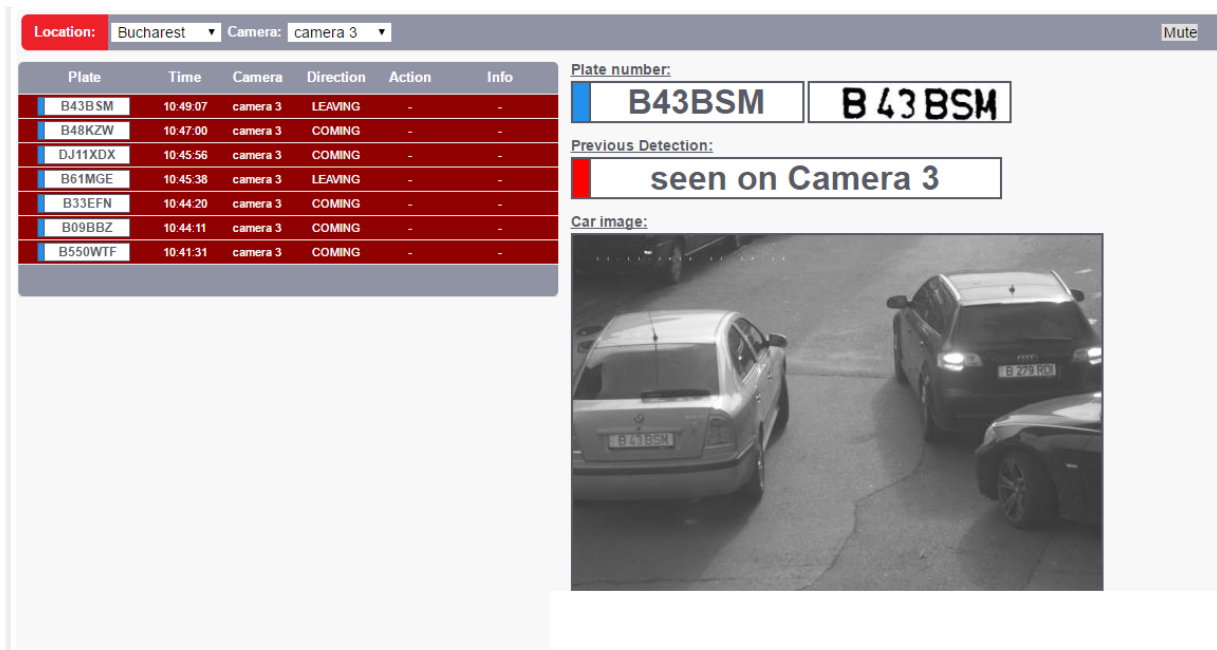
### ANOTHER OPTIONS METRICI LPR

#### 5.1 CAR FLOW

This menu generates a list of cars that are detected by Metrici LPR depending on what kind of alert the user chose: “cars in the action list” or “ cars not in the action list”. A beep sound will accompany every detection.

On the left there will be displayed the license plate, the hour of detection, the camera, direction, the action that must be executed if any,

On the right it shows car’s picture, the reconstructed number. (Fig.20). The list will reset when exiting this menu.



The screenshot shows the Metrici LPR interface. At the top, there are dropdown menus for 'Location: Bucharest' and 'Camera: camera 3', along with a 'Mute' button. Below this is a table with the following data:

Plate	Time	Camera	Direction	Action	Info
B43BSM	10:49:07	camera 3	LEAVING	-	-
B48KZW	10:47:00	camera 3	COMING	-	-
DJ11XDX	10:45:56	camera 3	COMING	-	-
B61MGE	10:45:38	camera 3	LEAVING	-	-
B33EFN	10:44:20	camera 3	COMING	-	-
B09BBZ	10:44:11	camera 3	COMING	-	-
B550WTF	10:41:31	camera 3	COMING	-	-

To the right of the table, there is a 'Plate number:' section with two boxes: the first contains 'B43BSM' and the second contains 'B 43 BSM'. Below this is a 'Previous Detection:' section with a box containing 'seen on Camera 3'. At the bottom right, there is a 'Car image:' section showing a grayscale camera feed of a parking area with several cars. One car in the foreground has a license plate that matches the first row of the table.

Fig.20

**NOTE** The alert method for each user can be set in **Administration menu, User Administration** submenu. From the list of user, click on the wanted name and a new window will open. (Fig.21)

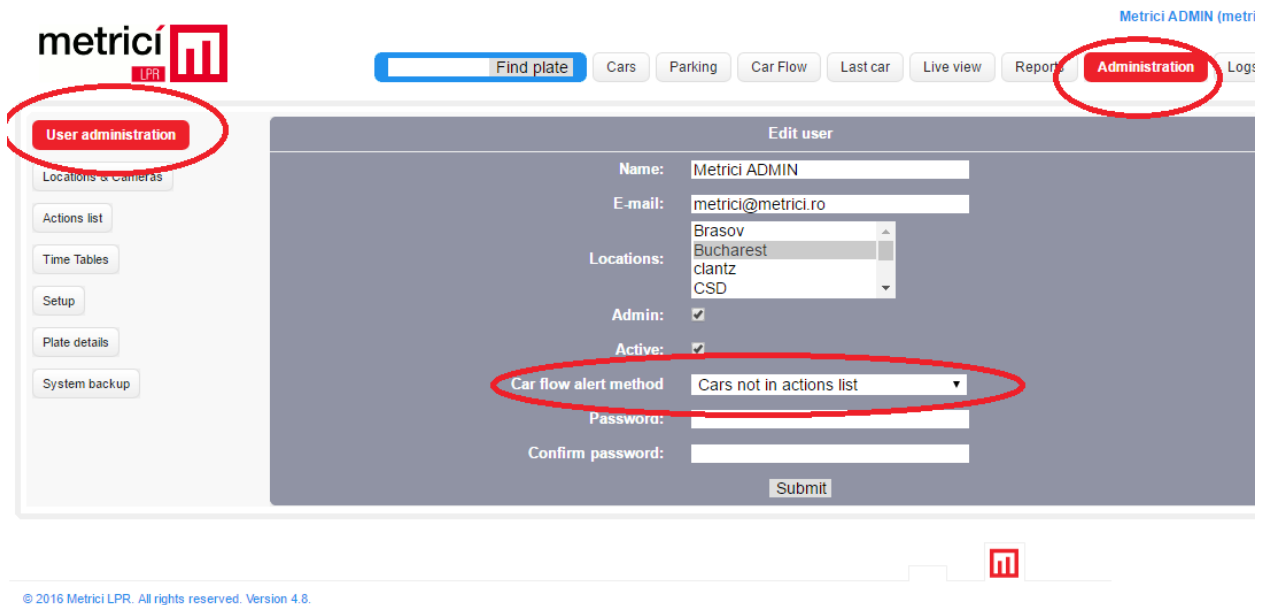


Fig.21

**“Car flow alert method”** option is where you choose what is the method of alert. *Cars not in the action list* will alarm the user and record every detected plate that is not on the *Action List*. In the same menu, one can pick the available locations for that user and if he has admin rights in the program.

## 5.2 LAST CAR

This menu will display the picture of last detected vehicle, as well as some information: date, location, camera, action to be executed. This image will change with any new detection (Fig. 22)



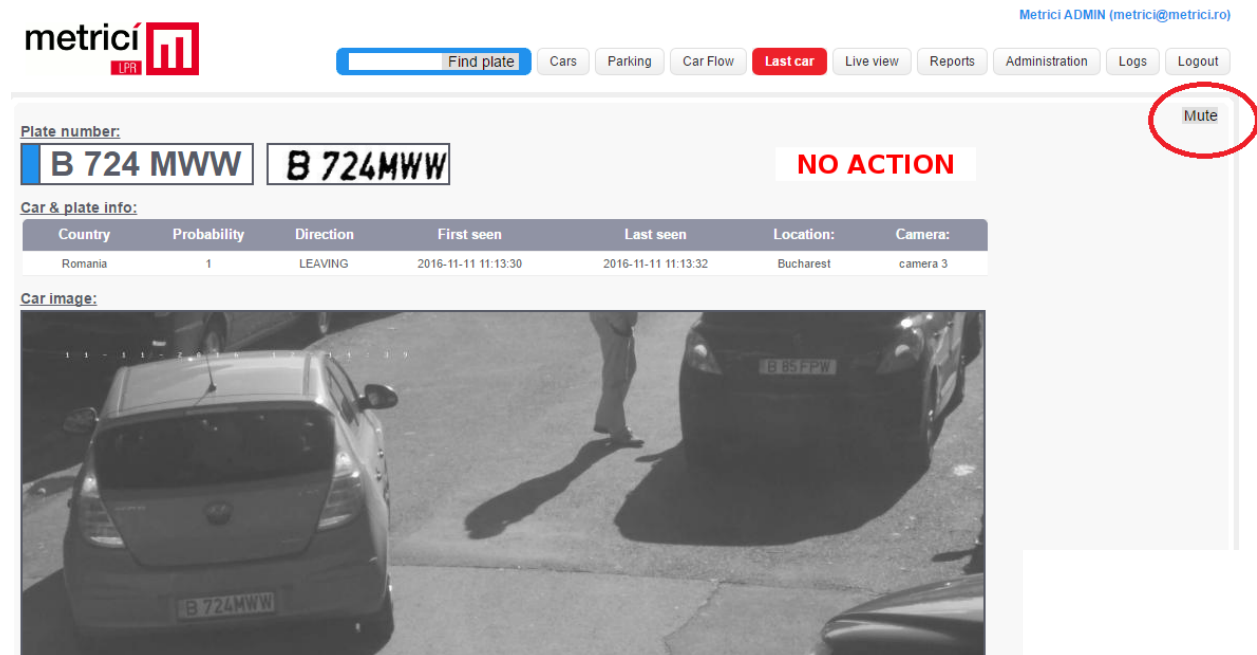


Fig.22

**NOTA:** *Car Flow and Last car menu have a button to Mute the sound (upper right) that accompanies every detection (Fig.22)*

### 5.3 LOGS

This menu will show the logins and modifications made in **Metrici LPR Web Interface** for the current day

## Final notes

### Metrici LPR

- ✚ Allows secured access in a parking/office/ area
- ✚ Can forbid access in car parks in predefined time intervals for any vehicle or for a specific license plate
- ✚ Can forbid access for any car that is not on software database
- ✚ Send an alert (e-mail, popup) when detected a specific license plate for which such an alert has been set
- ✚ Checks what is the time between entering and exiting a parking, for cost calculations, for example.

- ✦ Can calculate what is the time interval a car stayed in one place
- ✦ It reduces awaiting time when entering or exiting a parking/secured area
- ✦ Can check how many times a car has passed in front of a camera in a specified time interval.
- ✦ **Metrici LPR** can also be used by local administration for a better management of traffic problems
- ✦ Can check the auto flow: the amount of traffic on hours, days, months, with statistics that can help in traffic flow decongestion. One can modify the time a traffic light stays on or alternative routes, changing one-way streets, redirecting traffic on specific hours etc.
- ✦ **Metrici LPR** can also be used in parking spaces management

With all that in mind, **Metrici LPR** can be the solution in numerous applications: office buildings, transport companies, industrial parks,

Another advantages are:

- ✦ A large database regarding the traffic flow in a certain area, time period
- ✦ Automation and easy logistics for airports, office buildings, malls, transport companies
- ✦ Surveillance, monitor and security at the access points.
- ✦ Online coordination in real time from anywhere in the world with internet access
- ✦ Inventory management: a security manager can know any time where company's cars are: By recording any entrance and exit, one can keep a historic for every car.