

# SGSE

Soluciones Globales de Seguridad Electrónica

## PLUGIN – EXTENDED LPR

Installation and User Manual

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Más información ..... **¡Error! Marcador no definido.**

## 1. Document versions

<b>Version</b>	<b>Date</b>	<b>Author</b>	<b>Description</b>
<b>1.0</b>	01/2021	SDA	First version (English)

## 2. Introduction

The purpose of this document is to explain the installation, operation and use of the Milestone plugin *LPR Extended*.

This plugin, making use of the license plate readings made by the Milestone LPR Add-on, and therefore without the need to add an additional third-party license plate reading system/server, adds new advanced features related to LPR:

- ✓ Vehicle gauge control.
- ✓ Exceeded stay time alerts.
- ✓ Lists with temporary license plates.
- ✓ Automatic daily LPR reports.

The plugin enables the possibility to define virtual enclosures based on entrance and exit cameras, monitoring their occupation from Smart Client and receiving occupation related events in Milestone.

Email notifications can also be sent when a vehicle leaving an enclosure has exceeded the stay time established for that enclosure.

Additionally, the plugin enables the possibility to have temporary records in the Milestone license plates lists, allowing the operator to add a license plate to a list with an expiration date, and automatically deleting the license plate when the entered date has passed.

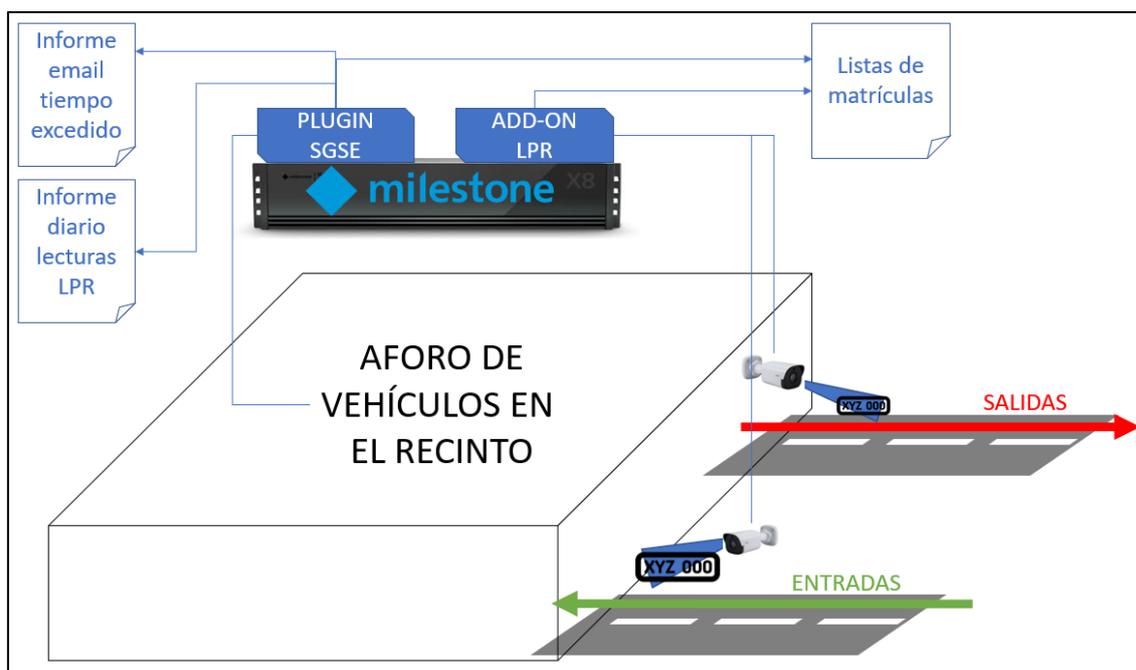
Finally, the plugin can automatically generate a daily CSV report with all the license plates that the system has read.

This way, we can have an informative tool on the vehicle occupation of a certain enclosure, a control on the vehicles that stay inside that enclosure longer than allowed, valid license plates with expiration date and daily reports of the license plates read by our Milestone LPR.

### 3. Architecture

The system is made up of several parts:

- Milestone license plate readings.
- Enclosure management.
- Exceeded stay time alerts and reports.
- Temporary license plate lists.
- Daily LPR reports.



#### Milestone license plate readings

The *LPR Extended* plugin does not read license plates but feeds on the information that Milestone provides through its automatic license plate recognition module (LPR Add-on).

Therefore, everything related to license plate reading, configuration, parameterization, etc., depends on the Milestone LPR module and must be dealt with from its own configuration. For more information, see the Milestone manual.

Through the management of enclosures, each camera may be assigned to the entrance or exit of an enclosure. The same camera may be interpreted as an exit from one enclosure and an entrance to another, but a single camera can never be configured as the entrance and the exit of the same enclosure.

#### Enclosures management

The plugin allows to define and manage enclosures. Each enclosure is defined by the following properties:

- Enclosure name.
- Maximum capacity.
- Pre-alarm threshold (percentage).

- The list of cameras that are entrances to the enclosure.
- The list of cameras that are exits from the enclosure.
- Maximum stay time allowed.

### Exceeded stay time alerts and reports

When a vehicle leaves an enclosure, the time that it has remained in the enclosure will be calculated, checking the time that the same vehicle entered the enclosure. To do so, the plugin searches the last time that any of the entrance cameras has registered the same license plate that has just been read by the exit camera.

If the stay time is longer than the configured one, then a Milestone event will be raised and a report with the images of the entrance and exit moments will be sent by email.

It is necessary to bear in mind that LPR systems, despite their great efficiency, are not infallible and depend largely on multiple factors, such as environmental factors, the installation of the camera or the configuration of the license plate recognition tool, therefore that abnormal situations could arise. For example, a vehicle could enter an enclosure and the entrance camera may not read its license plate, or it may read it wrongly (for example, license plate 1234JBH might be read as 1234JBM). In this case, when the exit camera will read it, the plugin will not be able to correctly calculate the stay time since, either there is no entry reading, or the last entry reading is from another day, reporting a stay time greater than real.

It is the customer's responsibility to verify the information generated by the system in cases of anomaly.

### Temporary license plates lists

Using the custom fields of Milestone lists, we can set one of the fields as the due date of the register and tell the plugin which lists have temporary license plates and which field contains the due date. The date format **must** be:

DD/MM/YYYY

The plugin will periodically check the selected lists and automatically delete the records where the value of the field containing the due date is before the current day.

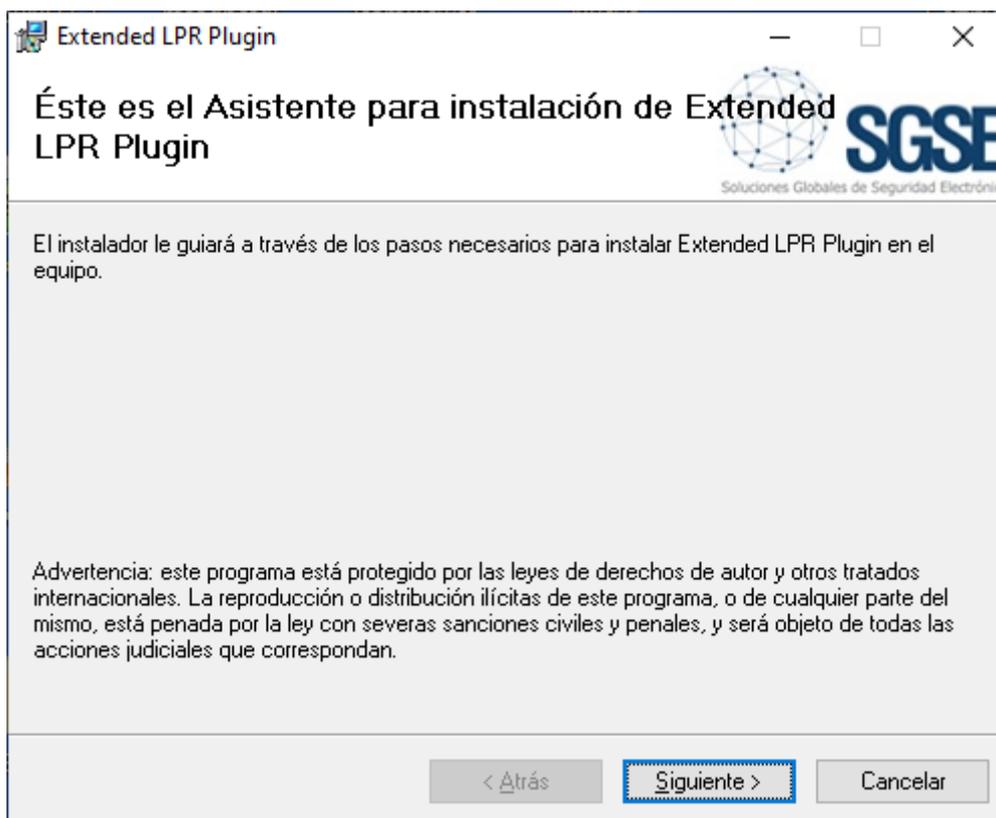
This feature is very useful to create temporary white lists, where we can grant access to some license plates until a certain date.

### Daily LPR reports

We can configure the plugin to send daily reports with the Milestone LPR readings in CSV format. We can select what time the report will be generated and automatically sent by email, according to configuration.

## 4. Installation

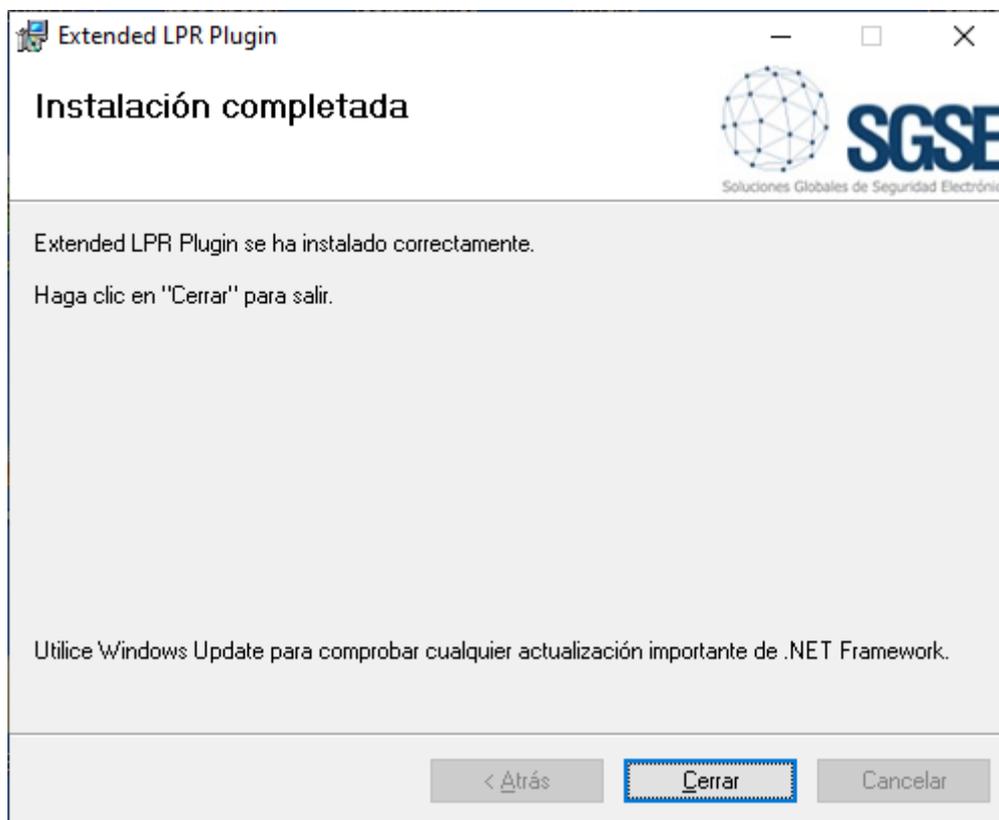
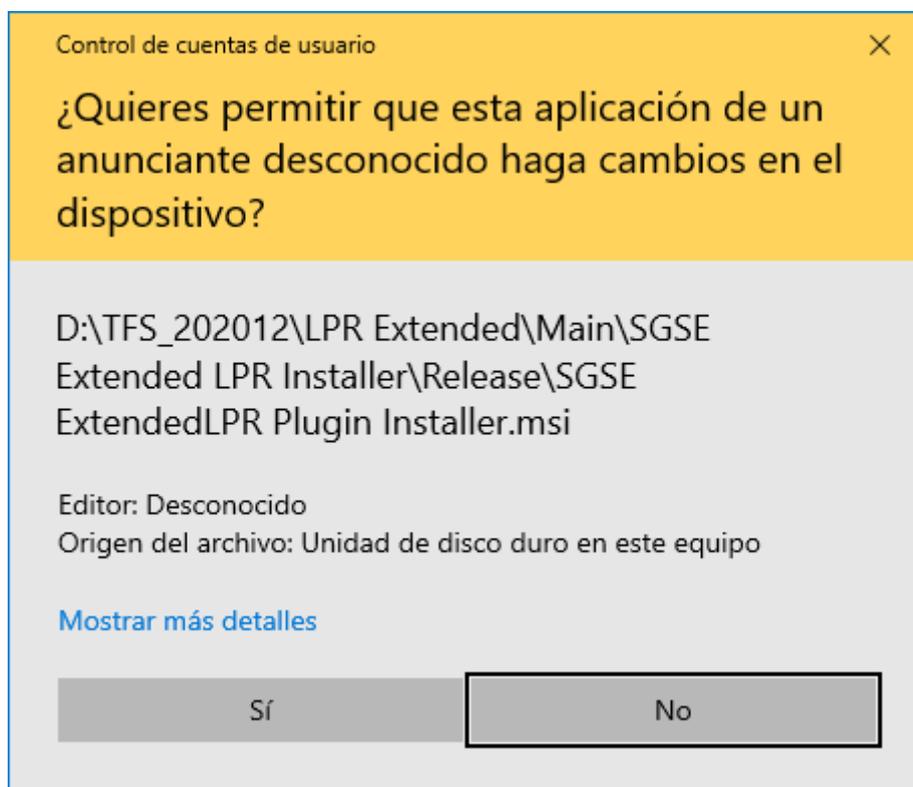
To install the plugin, simply run with administrator permissions the "SGSE Extended LPR Plugin Installer.msi" installer provided by SGSE. The process is automatic. Through the different screens of the installer, we will only have to accept the End User License Agreement, a necessary condition to be able to use the plugin.



Click "Next>" to begin the installation process.



If Windows *User Account Control* is enabled, allow the installer to continue with the installation.



Once the process is finished, you can click " Close ". The plugin is already installed.

## 5. Licensing

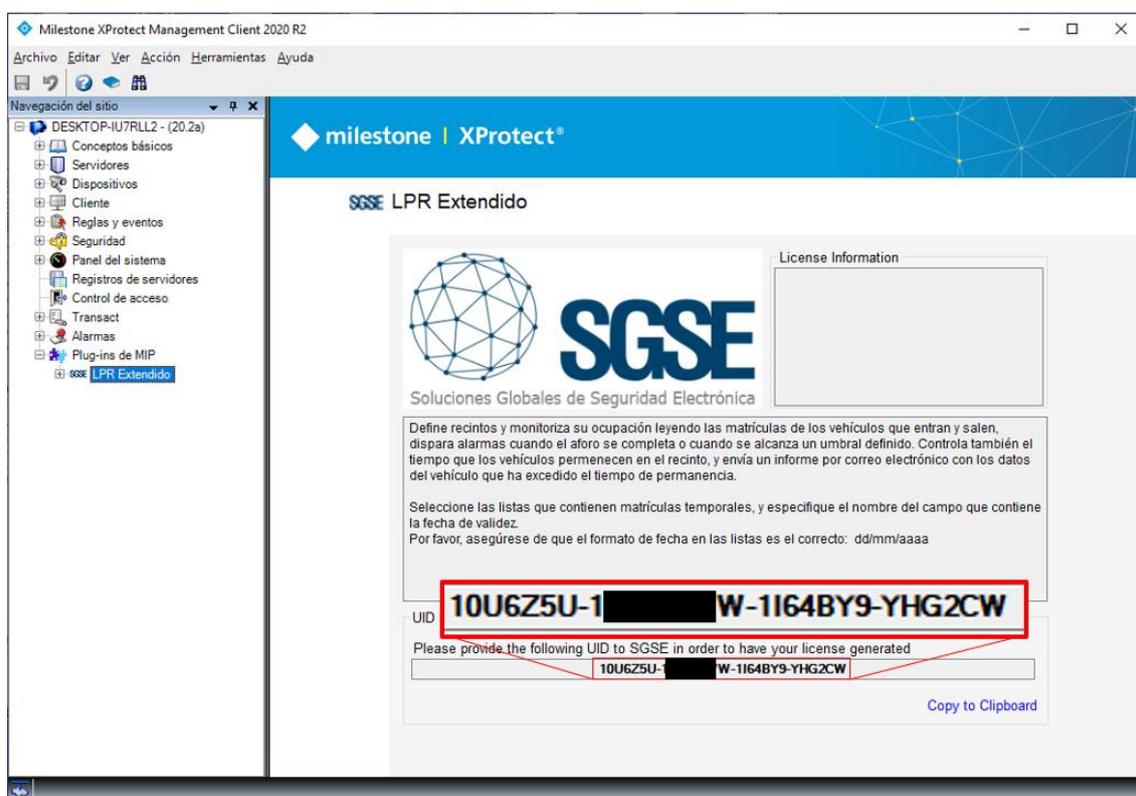
The plugin needs a license to run. For each pair of cameras to be used it will be necessary to purchase a license. These licenses are generated by SGSE. The procedure to obtain the license file corresponding to the purchased license is described below.

### A. Get the UID

To have your license file generated, you will have to provide SGSE the corresponding UID. This UID is a unique identifier to which the license is bound.

To get this code, run XProtect® Management Client after installing the plugin and navigate to the plugin option in the left side tree menu (*MIP Plugins > Extended LPR*).

This screen will show the corresponding UID when the plugin is not licensed.



Please provide this UID to SGSE so they can generate your license.

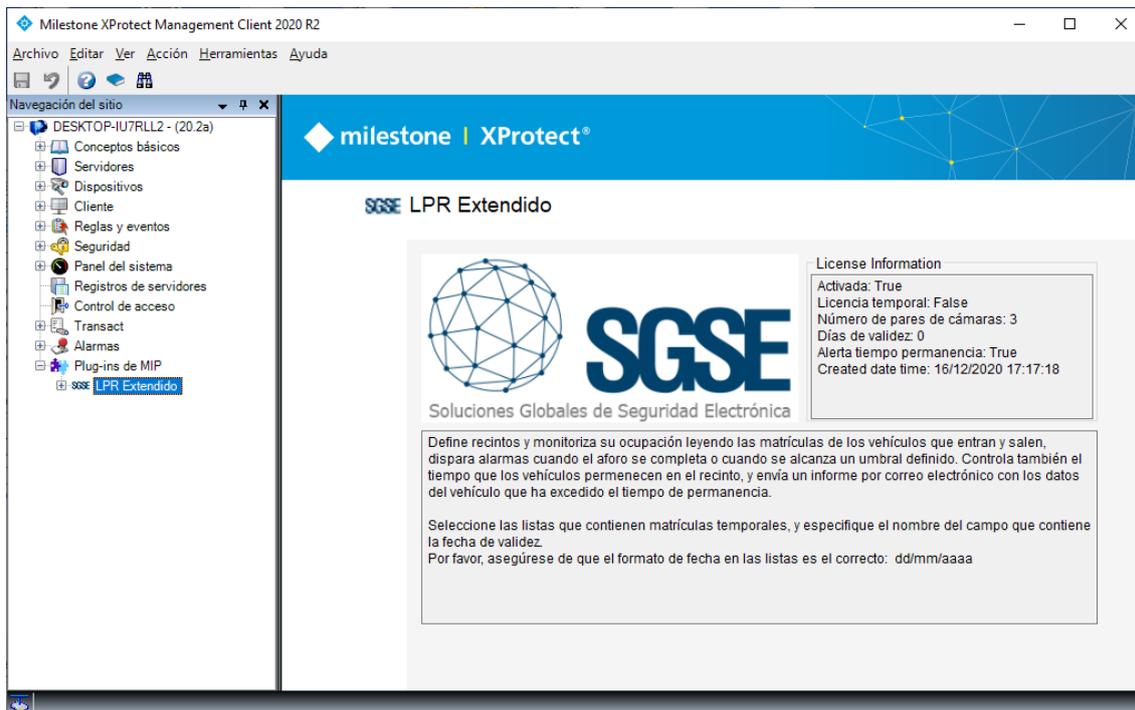
### B. Applying the license

Copy the license file "*Licencia.lic*" in the plugin directory. By default:

C:\Program Files\Milestone\MIPPlugins\ExtendedLPR\

Once the license is applied, it is necessary to restart the Event Server for the changes to take effect and you can use the plugin.

The Management Client interface will show the license information:



### C. Client workstations (only SmartClient)

To obtain the UID on a machine where the XProtect<sup>®</sup> Management Client configuration application is not installed and only the Smart Client is available, it will be necessary to use the SGSE “UID Generator” tool.

Contact SGSE technical support to obtain this tool.

## 6. Configuration

The solution is based on several elements, interrelated but independent. For the correct global operation of the solution, each of them requires to be configured:

- Milestone license plate reading (LPR add-on).
- Enclosures management.
- Exceeded stay time alerts and reports.
- Temporary license plates lists.
- Daily LPR reports.

### Milestone license plate reading (LPR add-on)

The license plate reading module is essential. This module obtains the information that the solution associates to entrances and exits, and without this information is not possible to carry out the occupancy control nor calculate stay time.

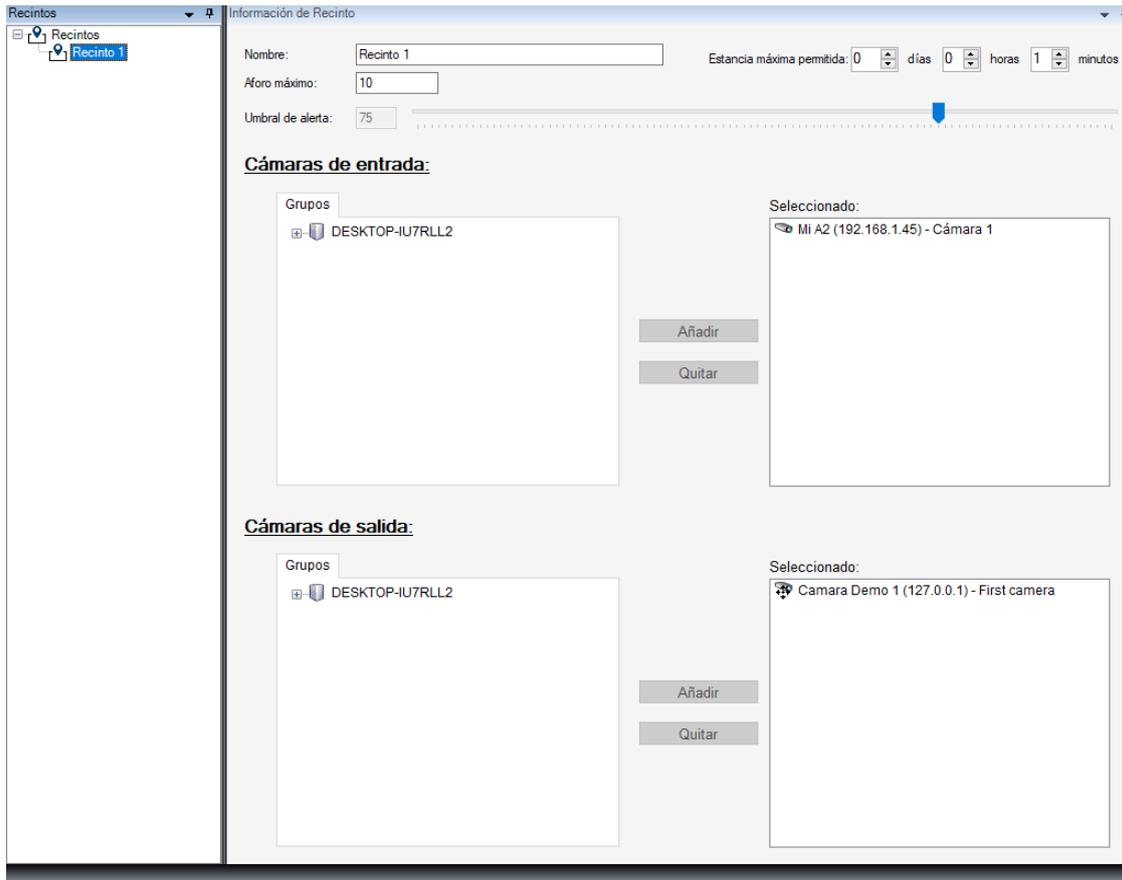
For this reason, it is necessary to install and configure this module following the indications given by Milestone to optimize the license plate detection and reading process.

Please, refer to the Milestone manual to set up the license plate reading system.

### Enclosures management

The plugin allows you to manage enclosures. Each enclosure requires a name to be identified in the system, and a series of configuration parameters, that can be set from the Management Client:

- Maximum capacity
- Pre-alarm threshold
- Maximum stay time
- List of cameras that are entrances to the enclosure
- List of cameras that are exits from the enclosure



Parameters and their meaning are explained in the table below:

Parameter	Description
<b>Max. Gauge</b>	It is the maximum number of vehicles allowed inside the enclosure. When this value is reached, an event is triggered in Milestone: <i>Max occupation reached</i> .
<b>Alert threshold (%)</b>	It sets the occupancy percentage that is considered “high occupancy” and close to the maximum capacity. When this threshold is overcome, an event is triggered in Milestone: <i>Alert threshold reached</i> .
<b>Max. Stay time allowed:</b>	Maximum time to be spent inside the enclosure. If a time higher than 0, the time that vehicles stay inside the enclosure will be calculated when they leave it, and a notification will be sent if it exceeds this parameter (see reports configuration).
<b>Incoming cameras</b>	List of cameras that represent entrances to the enclosure. When a camera on this list reads a license plate the occupancy of the enclosure is increased by one.
<b>Outgoing cameras</b>	List of cameras that represent exits from the enclosure. When a camera on this list reads a license plate the occupancy of the enclosure is decreased by one.

### Exceeded stay time alerts and reports

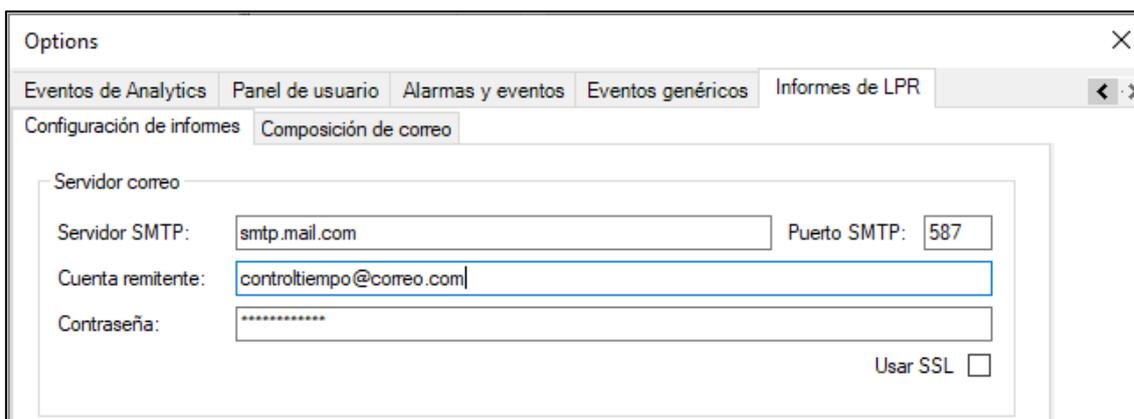
When a vehicle exceeds the residence time of an enclosure, the plugin can send a PDF report with the images by email, using the SMTP protocol. To do this, it is necessary to have a mail server with SMTP support and configure the parameters for sending LPR reports

In the Management Client, go to *Tools > Options > LPR Reports*.

There you will find two tabs, one to configure the email server, and another one to customize email.

In the first tab, “*Report settings*”, you can configure:

- The address of the mail server to send emails using SMTP.
- The SMTP port of the mail server.
- The account (user and password) that will be used to authenticate in the mail server to send emails.
- If the server uses SSL or not.

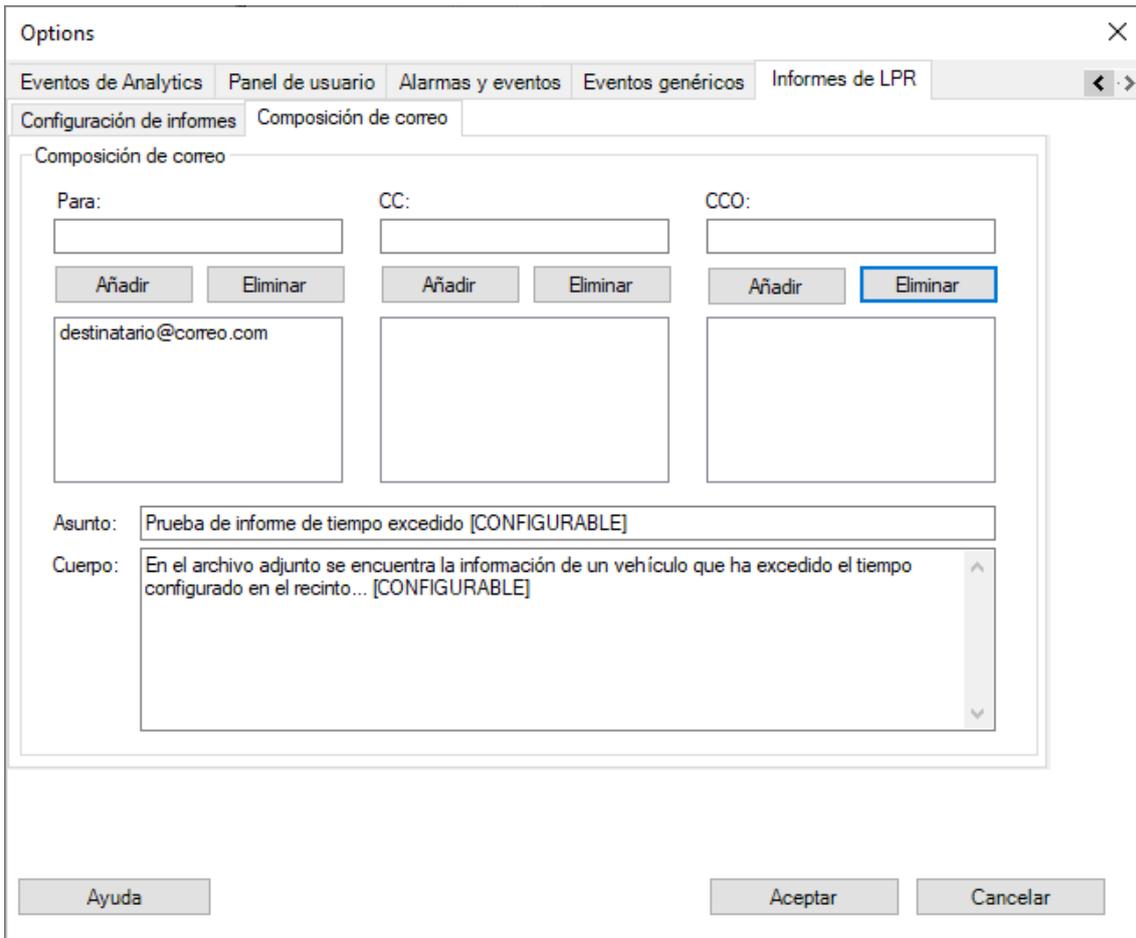


The screenshot shows a window titled "Options" with a close button (X) in the top right corner. The window has several tabs: "Eventos de Analytics", "Panel de usuario", "Alarmas y eventos", "Eventos genéricos", and "Informes de LPR". The "Informes de LPR" tab is active, and within it, the "Composición de correo" sub-tab is selected. Under "Composición de correo", there is a section titled "Servidor correo" containing the following fields: "Servidor SMTP" with the value "smtp.mail.com", "Puerto SMTP" with the value "587", "Cuenta remitente" with the value "controltiempo@correo.com", and "Contraseña" with a masked password "\*\*\*\*\*". There is also a "Usar SSL" checkbox which is currently unchecked.

The plugin will send emails making use of the configured mail server.

In the next tab, “*Mail composition*”, you can define:

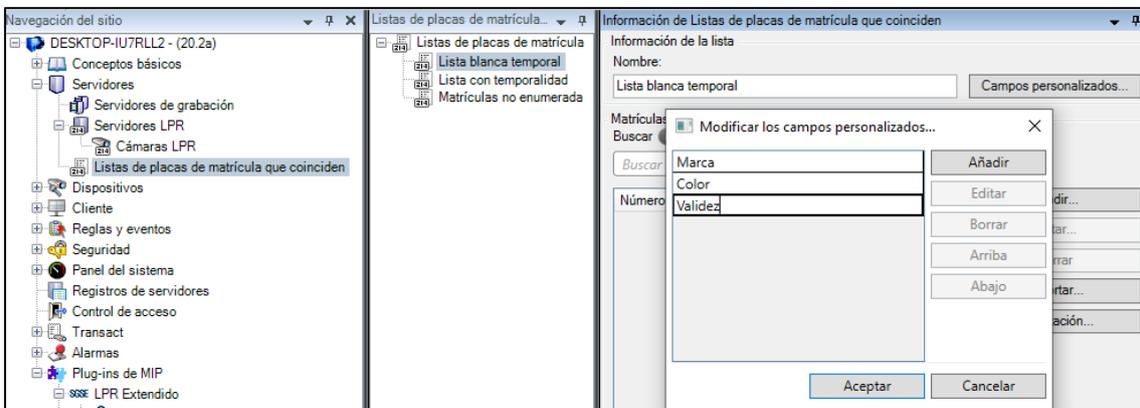
- The recipients of the email (to, CC, and BCC)
- The subject of the email.
- The body of the email.



### Temporary license plates lists

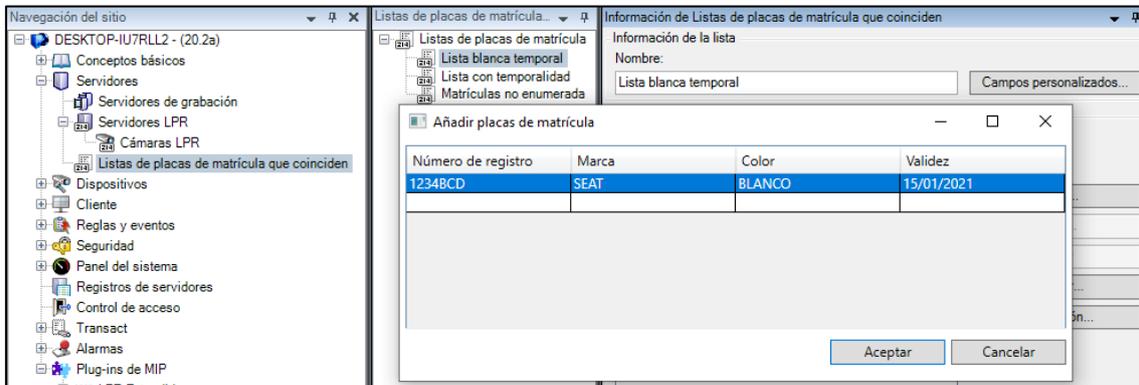
To configure temporary lists, the first thing needed is a license plates list. Each list containing temporary license plates must define one of the 5 available custom fields to hold the expiration date of the license plate.

To do so, select the list and click “Custom fields...”. In the configuration window, define the fields and use one to contain the validity date. Take note of the name of that field, as you will need it later on.



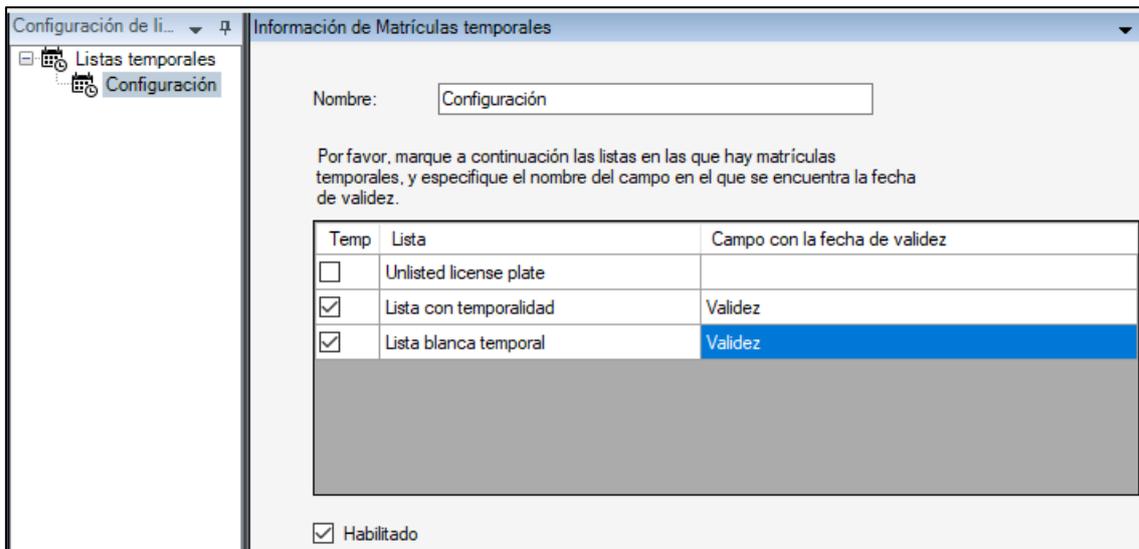
Once the list contains a field to hold the validity date of the record, when you register new license plates you will have to fill that field with the date until which the license plate will be kept in the list. The date format **must** be:

DD/MM/YYYY



The next step is to tell the plugin which lists contain temporary license plates and which field contains the due date.

Go to the option “*Temporary lists*”, select the lists that contain temporary license plates and write the name of the field that contains the date.



Saving changes starts a process that will periodically check the selected lists, and automatically remove the records which due date is previous to the current day.

### Automatic daily LPR reports

To send daily reports of LPR readings it is necessary to configure the parameters of the mail server and the recipients of the email containing the report (see [Exceeded stay time alerts and reports](#)).

In addition, we can configure the time at which we want the process to start every day, and if the data included in the report are from the current day (until the time the process starts) or from the previous day.

Generación de informes

Hora para generar el informe diario:

Generar el informe con datos del:  día actual  
 día anterior

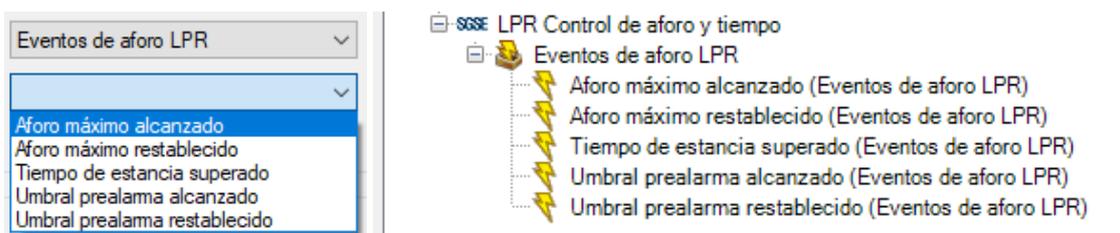
Habilitar informes diarios

You can select if you want the report to be generated and sent, by checking or unchecking the checkbox “Enable daily reports”.

### Events

The plugin adds new events to Milestone, under the group “LPR Gauge Events”, that can be used to define both rules or alarms in Milestone:

- Max occupation reached.
- Max occupation restored.
- Max stay time exceeded.
- Alert threshold reached.
- Alert threshold restored.

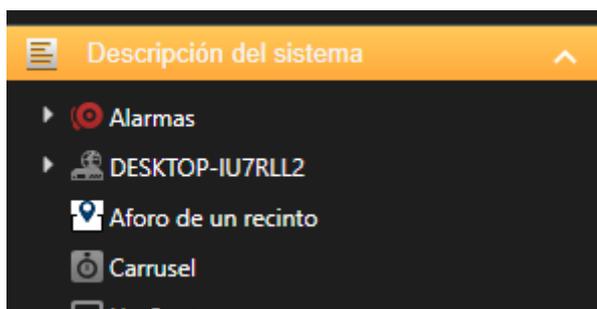


## 7. Operation

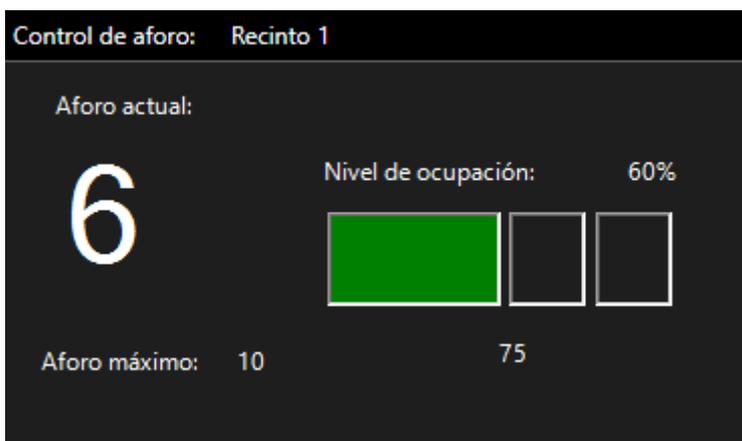
The plugin operates automatically once you have configured it. The operator will be able to monitor the status of enclosures from the Smart Client, thanks to the module the plugin includes.

### Visualization in Smart Client

To see the status of an enclosure, you just have to simply drag the component “Enclosure gauge” and drop it into a tile of the Smart Client view.



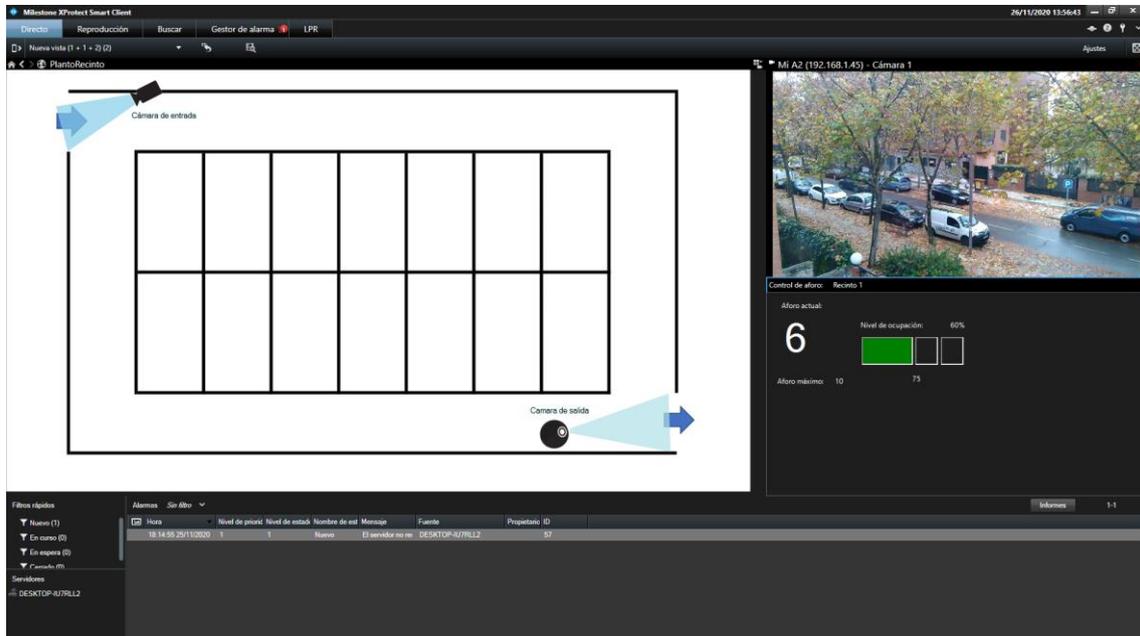
The status of the enclosure is shown through the next interface:



When the control is in the tile, you must specify which enclosure this control will show the information from. To do so, select the user control and in the left side bar select the desired enclosure:



This way, you can view quickly the occupancy of an enclosure while watching maps, cameras, alarms, etc...



### Enclosures status modification

If the Smart Client user has the permissions to edit settings, they can change the enclosure settings from the Smart Client interface.

From this interface, you can:

- Modify the maximum capacity of the enclosure.
- Modify the alert threshold.
- Update manually the current occupancy of the enclosure.



After updating the values, click “Save” button to save changes in the system.

### Register a temporary license plate

From Management Client

To register license plates in a list configured as a temporary list, the procedure is the standard way to register license plates in the Milestone lists.

You only need to remember to insert the date with the format DD/MM/YYYY in the appropriate field.

You can register license plates:

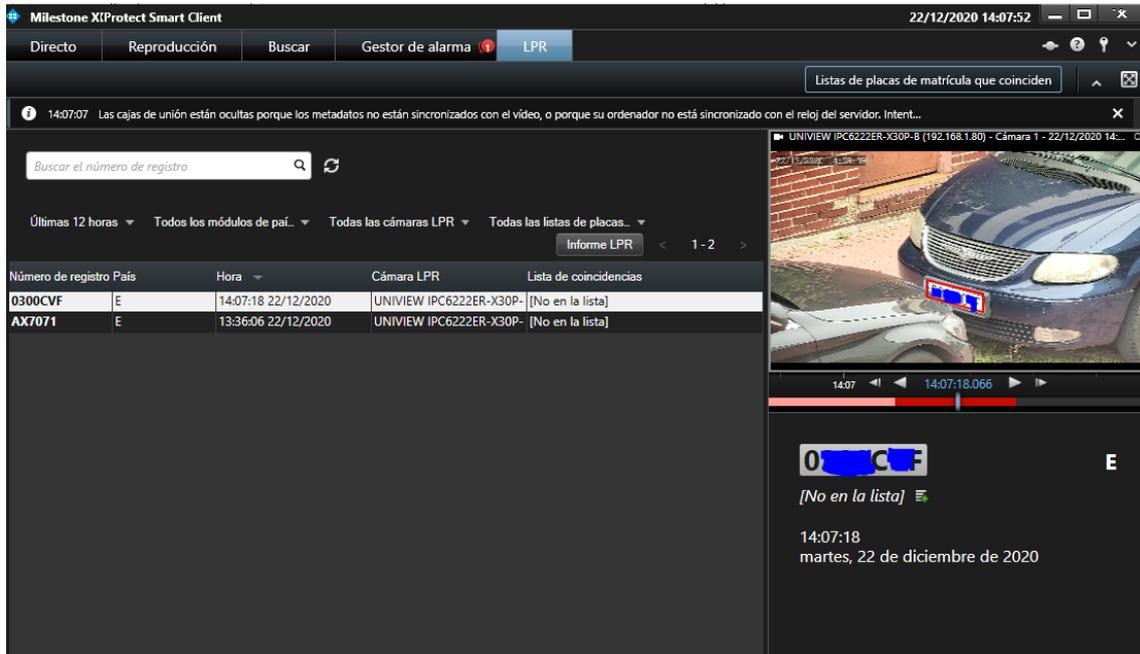
- ✓ Manually.
- ✓ A batch import from a CSV file.

To register a license plate manually, see the configuration section [Temporary license plates lists](#).

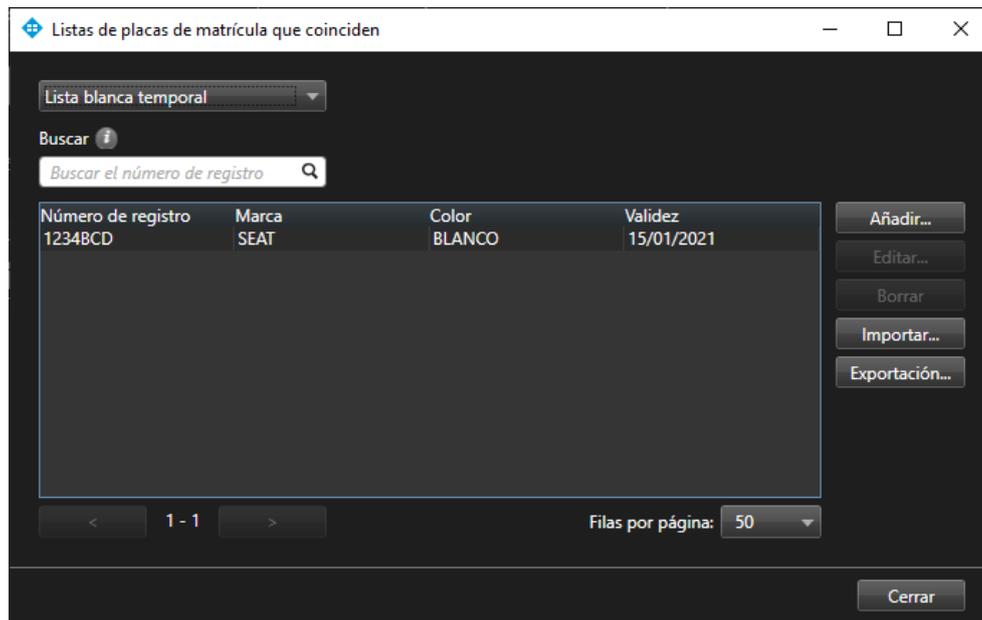
To import a CSV file with the license plates, be sure that the format of the file lines fits the list fields, separated by a semicolon “;”.

From the el Smart Client

A temporary license plate is registered from the Smart Client the same way you register a normal license plate into a Milestone list. From the Smart Client we have the same options than we have from Management Client. To access to the list management section, go to the “LPR” workspace and click the upper right button “License plate match lists”.



In the “License plate match lists” window, select the list from the dropdown and select to register a single license plate manually or to import a batch CSV file. Just ensure that the file line format fits into the fields defined in the list.



## 8. Troubleshooting

### License plate reading

The license plate Reading is performed by the Milestone LPR add-on. If the system does not read license plates properly, please check Milestone LPR module configuration.

### Email

If you do not receive the email, check configuration of the SMTP server parameters.

### Image retrieval

If pictures are not properly captured for the records, please check that the cameras are continuously being recorded, or at least ensure that the systems is recording cameras when the vehicles enter and leave the enclosure.

### Occupancy level not updated

Check that you have selected an enclosure to show the information from.

The information of read license plates is not reported immediately, so the plugin cannot update the occupancy until the LPR event is not processed and registered in Milestone. Please wait some second for the information to be updated in Milestone.

### Logs

The plugin logs information in the following folders:

C:\ProgramData\SGSE\ExtendedLPR\

C:\ProgramData\SGSE\ImageRetriever\

If the plugin is configured to log into Milestone (config file), it adds log traces into the Milestone MIP logs. These logs are located in the path:

C:\ProgramData\Milestone\XProtect Event Server\logs\MIPLogs\

### More information

For more information, please contact SGSE through the email [sat@sgse.eu](mailto:sat@sgse.eu).