

Soluciones Globales de Seguridad Electrónica

PLUGIN – EXTENDED LPR

Installation and User Manual



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1. Document versions

Version	Date	Author	Description
1.0	01/2021	SDA	First version (English)
1.1B	03/2022	SDA	Modifications with subareas
	07/2022	DBL	New event "Max staty time exceeded without exit", new tab "Enclosure Monitoring"
	10/2022	JAFZ	New control module for reduced mobility parking spaces.
	12/2022	IDP	New control "Dashboard"



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 Addon, 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.
- ✓ Control access for shared spaces in car parks.
- ✓ Reduced mobility parking space control events

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. Inside these enclosures, subareas of shared spaces can be defined for a license plate list, so that access to those shared spaces is controlled.

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.

The plugin allows the registration of HikVision decoders with parking space control for fast parking space management and event generation in Milestone.

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, control of the occupancy of parking spaces for people with reduced mobility 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.
- Subareas management.
- Exceeded stay time alerts and reports.
- Temporary license plate lists.
- Daily LPR reports.
- Management of parking space decoders



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 <u>the same enclosure</u>, and must not read the license plates of cars both coming in and going <u>out of the enclosure</u>.

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.

Subareas management

The plugin lets you define subareas inside enclosures. These subareas are defined by a set of shared parking spaces and a license plate lists. The aim of these subareas is to be able to reserve some spaces for a group of people. If the shared spaces are less than the people that can use them, then the first come first served principle applies.

So, if the shared subarea is already full when an allowed license plate is read by the entrance camera, the access will be rejected, and an event will be triggered in Milestone.

If there is still any free space, then the access will be granted, and again an event will be triggered in Milestone to inform so.

A subarea is bound to the enclosure where it's located, and has some other properties:

- Name of the subarea.
- Number of shared spaces.
- The list of license plates assigned to the subarea.

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.

Management of parking space decoders

We can add several HikVision decoders, from which we can obtain information about the parking spaces configured and generate Milestone events.



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.

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Welcome to the Extended LPR Plugin Setu Wizard	Soluciones Glot		
The installer will guide you through the steps required to install Extended computer.	LPR Plugi	n on your	
WARNING: This computer program is protected by copyright law and int Unauthorized duplication or distribution of this program, or any portion of or criminal penalties, and will be prosecuted to the maximum extent possi	ernational I it, may resu ble under t	treaties. Ilt in sever he law.	e civil
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Click "Next>" to begin the installation process.



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License Agreement		Soluciones Git	SG Isales de Segurida	
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End-User License Agreemen	t (EULA) of "Exte	nded LPR" Plug	in	^
This End-User License Agreemen (the "User") and Soluciones Glob This EULA agreement governs yo Plugin software ("Software") dire Electrónica (SGSE) or indirectly th	nt ("EULA") is a lega bales de Seguridad ur acquisition and ectly from Solucione nrough a Solucione	l agreement betw Electrónica (SGSI use of our "Extend es Globales de Seg s Globales de Seg	veen you E). ded LPR" eguridad guridad	~
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Please read and accept the End User License Agreement to install the plugin.

🖟 Extended LPR Plugin		_		×
Confirm Installation		Soluciones	Globales de Seg	
The installer is ready to install Extended L	PR Plugin on your	computer.		
Click "Next" to start the installation.				
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Click "Next>" to continue and install the plugin files.



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.



To install the dashboard, run the "SGSE ExtendedLPR Dashboard Installer.msi" installer in the same way.

😸 SGSE LPR Extended Dashboard	_		\times
Welcome to the SGSE LPR Extended Setup Wizard	Dashboard Solutiones Gio	SC bales de Segurio	
The installer will guide you through the steps required to install SI your computer.	3SE LPR Extende	d Dashboa	ard on
WARNING: This computer program is protected by copyright law Unauthorized duplication or distribution of this program, or any po or criminal penalties, and will be prosecuted to the maximum exte	v and international ortion of it, may resu ont possible under t	treaties. ult in sever the law.	e civil
< <u>B</u> ack	<u>N</u> ext >	Cano	el

Click "Next>" to begin the installation process.



😽 SGSE LPR Extended Dashboard		_		×				
License Agreement		Soluciones G	SG					
Please take a moment to read the license agreement now. If you accept the terms below, click "I Agree", then "Next". Otherwise click "Cancel".								
End-User License Agreem	ent (EULA) of "E	xtended LPR Dash	board"	^				
	Ser	vice						
This End-User License Agreement ("EULA") is a legal agreement between you (the "User") and Soluciones Globales de Seguridad Electrónica (SGSE). This EULA agreement governs your acquisition and use of our "Extended LPR Dashboard" ("Software") directly from Soluciones Globales de Seguridad								
◯ I <u>D</u> o Not Agree	. ● I <u>A</u> gree							
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Please read and accept the End User License Agreement to install the plugin.

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Confirm Installation	Soluciones Glo		SEE dad Electrónica
The installer is ready to install SGSE LPR Extended Dashboard on you	r computer.		
Click "Next" to start the installation.			
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Click "Next>" to continue and install the plugin files.



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.



Additional configuration

In case the dashboard service is not going to be installed on the same machine where the Event Server is installed, the full URL of the dashboard web service must be specified. This can be done both in the Smart Client and in the Management Client in the following options:

Smart Client:



Settings	_		×
Application	Extended LPR dashboard URL		
Panes	http://dashboard-server/ExtendedLPRDashboard/		
T units	This value must be filled with the URL of the dashboard. (For example: http://dashboard-server/ExtendedLPRDashb	ooard/)	
Functions	If the dashboard was installed on the Event Server machine, it is not necessary to fill in this field.		
Timeline			
Export			
Smart map			
Search			
Joystick			
Keyboard			
Access control			
Alarm Manager			
Extended LPR Dashboard			
Advanced			
Language			
Help			lose
пер			iose .:



Management Client:

Tools > Options > Extended LPR Dashboard

Options					×			
Customer Dashboard	Alarms and Events	Generic Events	LPR Reports	Extended LPR Dashboard	< ·>			
Extended LPR Dashb	poard							
Extended LPR dashb	oard URL							
http://dashboard-ser	ver/ExtendedLPRDasl	hboard/						
This value must be filled with the URL of the dashboard. (For example: http://dashboard-server/ExtendedLPRDashboard/)								
		• • • •						
If the dashboard was	installed on the Event	Server machine, it	is not necessary	to fill in this field.				
	_							
Help				ОК	Cancel			

The value is common and can be specified in either of these two views. By default, if the value is empty, it will be assumed that the dashboard is installed on the same machine as the Event Server.

If you want to establish a specific configuration on a specific machine, you can modify the file C:\Program Files\Milestone\MIPPlugins\ExtendedLPR\LPRExtended.dll.config by filling in the dashboardUrl property with the full URL of the dashboard web service.

<add key="dashboardUrl" value="http://servidor/ExtendedLPRDashboard"/>

This value will take precedence over the settings specified in the previous panel.

The dashboard service has a variable to specify the connection to the SQL Server database. By default it will try to make a connection against the local machine but it can be customized in the file C:\Program Files\SGSE\SGSE LPR Extended Dashboard\appsettings.json



5. Licensing

The plugin needs a license to run. For each pair of cameras used to define enclosures it will be necessary to purchase a license. Please consult the licensing model with SGSE.

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 user the plugin.



Milestone XProtect Management Client 2	020 R2			-		×
Archivo Editar Ver Acción Herramientas	<u>A</u> yuda					
Navegación del sitio • 4 × DESKTOP-IU7RLL2 - (20.2a) Conceptos básicos Servidores Servidores	♦ milest	one XProtect®		X		1
tel 20 Dispositivos ⊕ ☐ Cliente ⊕ ∰ Reglas y eventos ⊕ eta 20 Securidad	SGSE	_PR Extendido				
S Panel del sistema		A l	License Information			
Image: Registros de servidores Image: Registros de servidores <td< td=""><td></td><td>SGSSE Soluciones Globales de Seguridad Electrónica</td><td>Activada: True Licencia temporal: False Número de pares de cámaras Días de validez: 0 Alerta tiempo permanencia: Ti Created date time: 16/12/2020</td><td>s: 3 rue) 17:17:</td><td>18</td><td></td></td<>		SGSSE Soluciones Globales de Seguridad Electrónica	Activada: True Licencia temporal: False Número de pares de cámaras Días de validez: 0 Alerta tiempo permanencia: Ti Created date time: 16/12/2020	s: 3 rue) 17:17:	18	
•		Define recintos y monitoriza su ocupación leyendo las matr dispara alarmas cuando el aforo se completa o cuando se tiempo que los vehículos permenecen en el recinto, y envia del vehículo que ha excedido el tiempo de permanencia. Seleccione las listas que contienen matrículas temporales la fecha de validez. Por favor, asegúrese de que el formato de fecha en las lista	ículas de los vehículos que entran alcanza un umbral definido. Contro u un informe por correo electrónico (, y especifique el nombre del camp as es el correcto: dd/mm/aaaa	y salen, bla tamb con los o que c	ién el datos ontiene	

The Management Client interface will show the license information:

The Event Server machine must be licensed.

C. Client workstations (only Smart Client or Management Client)

Every client machine (Management Client or Smart Client) must also have a *Licencia.lic* file. These are free of charge but required to operate. Please contact SGSE with the UID for the machine, specifying that it's a client UID and a way to identify the PC it corresponds to. SGSE will get back to you with the corresponding Licencia.lic with the identification you provide.

To obtain the UID on a machine where the XProtect [®] 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.
- Subareas management*.
- Exceeded stay time alerts and reports.
- Temporary license plates lists*.
- Daily LPR reports.
- Management of parking space decoders.

Features marked with an * should be performed from the Management Client in the Event Server (actually, in the Server where the SQL Server is installed). Otherwise, additional configuration is required for them to work.

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



Recintos 🚽 🕂	Información de Recinto	* ÷
Recinto 1	Nombre: Recinto 1 Aforo máximo: 10 Umbral de alerta: 75	Estancia máxima permitida: 0 🐨 días 0 🔹 horas 1 👻 minutos
	<u>Cámaras de entrada:</u>	
	Grupos	Seleccionado:
		Añadir Quitar
	<u>Cámaras de salida:</u>	
	Grupos	Seleccionado:
		Añadir Quitar

Parameters and their meaning are explained in the table below:

Parameter	Description
Max. Gauge	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> .
Alert threshold (%)	It sets the occupancy percentage that is considered "high occupancy" and close to the maximum capacity. When this threshold is overcome, an evento is triggered in Milestone: <i>Alert threshold reached</i> .
Max. Stay time allowed:	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).
Incoming cameras	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.
Outgoing cameras	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.



Subareas management

Subareas can be created inside an enclosure. To define them, a name is required to identify it in the system, and some other parameters:

- The number of shared spaces that there are in the subarea.
- The list of license plates that share these spaces.



Should it be needed to specify manually the current occupancy of a subarea (because the LPR didn't read properly a license plate going out of the parking, or because when the plugin is installed there are already cars in shared spaces), using the button "Set current occupancy" you can specify the number of shared spaces that are already occupied in the subarea.

Subareas 👻 🕂	Subarea Information	→ 쿠
Subareas Enclosure 1 Shared spaces 1	Name:	subarea 2
Subarea current occupancy Set current subarea occupar	y x spi	aces: 2
	h 🖨	List23 V
Can	cel Accept	Set current occupancy

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.

Options					 ×
Eventos de Analytics	Panel de usuario	Alarmas y eventos	Eventos genéricos	Informes de LPR	< .>
Configuración de inform	es Composición d	e correo			
Servidor correo					
Servidor SMTP:	smtp.mail.com			Puerto SMTP: 587	
Cuenta remitente:	controltiempo@c	orreo.com			
Contraseña:	•••••				
				Usar SSL [

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.



ventos de A	nalvtics Panel de us	uario Alarmas v event	os Eventos genéricos	Informes de LPR	
onfiguraciór	de informes Composid	ión de correo			
Composició	n de correo				
Para:		CC:	CCO:		
Aña	dir Eliminar	Añadir	Eliminar A	ñadir Eliminar	
destinata	ario@correo.com]			
Asunto:	Prueba de informe de t	empo excedido [CONFIG	URABLE]		
Cuerpo:	En el archivo adjunto s configurado en el recin	e encuentra la informació to [CONFIGURABLE]	n de un vehículo que ha	excedido el tiempo	^
					~
					~
					×
					~

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.

Navegación del sitio 👻 🕂 🗙	Listas de placas de matrícula 👻 📮	Informaciór	n de Listas de placas de matrícula que coincide	in .	↓ ₽
□· ● DESKTOP-IU7RLL2 - (20.2a)	🖃 📰 Listas de placas de matrícula	Informació	ón de la lista		
🕀 🛄 Conceptos básicos	Lista blanca temporal	Nombre:			
Servidores	Lista con temporalidad	Lista blar	nca temporal	Campos pe	ersonalizados
Servidores de grabación	Matrículas no enumerada				
E III Servidores LPR		Matrículas	Modificar los campos personalizados	. ×	
Cámaras LPR		Buscar (
Listas de placas de matrícula que coinciden		Buscar	Marca	Añadir	
🕀 😿 Dispositivos			Color	Editar	
E 🖳 Cliente		Número	Validez	201001	dır
🗄 🚯 Reglas y eventos				Borrar	tar
🗄 🐗 Seguridad				Arriba	
🗄 🕲 Panel del sistema					IId
Registros de servidores				Abajo	rtar
- 🕞 Control de acceso					noión
Transact					acion
🕀 🧏 Alarmas					
🖹 🌸 Plug-ins de MIP					1
SSSE LPR Extendido			Aceptar	Cancelar	1



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

Navegación del sitio 🗢 👎 🗙	Lista	as de placas de matrícula 👻		Información de Listas (de placas de matrícula que co	oinciden			↓ ₽
	E.	E Listas de placas de matríc	ula	 Información de la lista 	3				
Conceptos básicos		Lista blanca temporal		Nombre:					
Servidores	1	Lista con temporalidad		Lista blanca tempora	al		Campo	s persor	nalizados
Servidores de grabación	1.1	Matrículas no enumera	ada					-	
🖃 🚛 Servidores LPR		🔳 Añadir placas de matri	cula			-		X	
Cámaras LPR	1		_						
Listas de placas de matrícula que coinciden	1	Número de registro	Mar	ca	Color	Validez			
🗄 ኛ Dispositivos	1	1234BCD	SEA	Г	BLANCO	15/01/202	1		
Cliente									
🕀 🚯 Reglas y eventos									
🗄 🐗 Seguridad	1								
🕀 🔊 Panel del sistema	1								
Registros de servidores									
- Rev Control de acceso									
Transact	1								20
🗄 🌏 Alarmas					Acep	tar	Cancel	ar	
🖮 🎒 Plug-ins de MIP									
D CONT L DD Eviter dide			_						

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.

Configuración de li 👻 📮 Información de Matrículas temporales 🗨							
⊡ 🐻 Listas temporales ∰ Configuración	Nombre: Porfavo tempora de valido	Nombre: Configuración Por favor, marque a continuación las listas en las que hay matrículas temporales, y especifique el nombre del campo en el que se encuentra la fecha de validez.					
	Temp	Lista	Campo con la fecha de validez				
		Unlisted license plate					
		Lista con temporalidad	Validez				
		Lista blanca temporal	Validez				
	✓ Habi	litado					

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 <u>Exceeded stay time alerts</u> 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:	17:34
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".

Management of parking space decoders

To be able to work with the decoders, they must first be created within the plugin configuration, in the section LPR Extended -> Decoders -> Add New.



After adding a decoder, it is necessary to add its configuration: User, password and IP address of the decoder.

Parkings configu	ration Information	-	д
Name:	Decoder 1		
User:	user1		
Password:	******		
IP Address:	192.168.2.1		

It is necessary to save the configuration for it to take effect. Once configured, we will be able to collect events in our Milestone Smart Client.

Events

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



- Max occupation reached.
- Max occupation restored.
- Max staty time exceeded.
- Max staty time exceded without exit.
- Alert threshold reached.
- Alert threshold restored.



Events related to alert threshold, maximum occupation and exceeded stay time are related only to enclosures, not to subareas.

Access granted and access denied events instead are related to subareas, not to enclosures. Access control is only performed when the license plate read by the entrance cameras is part of a list that is related to a subareas. Otherwise, no event of this kind is triggered.

Aim and example

The aim of enclosures is to monitor the gauge, not to control access. That can still be performed with lists not associated to subareas and standard milestone LPR events.

The aim of subareas, as described above in this manual, is to share a number of parking spaces between several cars. For example, you could reserve 3 parking spaces for the administration department, where 5 people work. They would have access, but if there are already 3 cars inside (that is, all the shared spaces are full), then the access is denied.

You can define full access control if all the spaces of a parking are assigned to a subarea and the *"Unlisted license plate"* standard Milestone event does not open the gate, so that it only opens when an authorized license plate gets to the entrance camera and its assigned subarea still has free spaces.



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 thorugh the next interface:

Control de aforo:	Recinto 1
Aforo actual:	
6	Nivel de ocupación: 60%
Aforo máximo:	10 75

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.



XProtect	<	Nueva vista (1 + 1	+ 2) (2)	•	5
📰 Vistas	\sim	Control de aforo:	Recinto	1	
Descripción del sistema	\sim	Aforo actual:			
 Botones superpuestos Propiedades Seleccione recinto: 	~ ^	6		Nivel de ocupación:	60%
Aforo Maximo: Umbral alarma (%): Aforo actual:	10 75 6 Guardar	Aforo máximo:	10	75	

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

Subareas occupancy monitoring

From the Smart Client you can have a quick overview of the occupancy of the defined subareas.

From the side panel, you can access a tree view that will show the subareas grouped by the enclosure they belong to, with the current occupancy and the total of shared spaces of each subarea.



The plugin operates automatically with subareas, by checking the read license plates against subareas, license plates lists, occupancy and the reading camera, so as to keep updated the current occupancy of the subarea and to grant or deny access, if it proceeds.



Sometimes, it might be necessary to manually set the current occupancy of the subarea (in case the plugin is set up with cars already inside the subareas, or if the LPR readings, not being a 100% precise technology, might have led to an inexact occupancy value). In that case, from the Management Client you can manually set the occupancy value.

Subarea Information	▼ ₽
Name:	subarea 2
y x	2000
ncy:	
h 🗭	List23 ~
Accept	Set current occupancy
	Subarea Information Name: Sy x spano: I + ncel Accept

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 <u>Temporary license</u> <u>plates lists</u>.

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 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.

💠 Listas de placas de ma	atrícula que coincide	n		– 🗆 X
Lista blanca temporal Buscar (‡) Buscar el número de re	egistro Q			
Número de registro 1234BCD	Marca SEAT	Color BLANCO	Validez 15/01/2021	Añadir Editar Borrar Importar Exportación
< 1-1	>		Filas por página: 50 🔹	1
				Cerrar

Monitoring Enclosures and Subareas

From Smart Client it is possible to monitor, in real time, the occupation of each of its enclosures and existing subareas.

From the "Enclosures and subareas" tab, through a drop-down list it is possible to select a certain enclosure.



Milestone XProtect Smart Client						
Directo	Reproducción	Buscar	Gestor de alarma	LPR	Enclosures and subareas	
	•					
Recinto A						
Necili						
Rocin	to R					

Once the name of the enclosure has been selected, the related subareas will be displayed:



After detecting a new license plate reading, moving the mouse pointer over the vehicle icon will display a pop-up window with the following information:

```
<License Plate> - <Incomming date and time> - <Length of stay>
```

As each one of the registrations exceeds the time of permanence within a precinct this information will turn **red**, next to the name of the precinct or the subarea(s) a small **red** circle will be shown with a number in its interior that indicates the number of vehicles that are in this situation, a **red** circle will also be shown surrounding the vehicle icon both in the enclosure and in the affected subarea(s).



Below is the legend with the different occupancy levels of the enclosures:



Icono	Descripción
ante su a de la de la La de la de	Indicates that the alert threshold has not yet been reached in the occupation of the enclosure.
	Indicates that the alert threshold has been reached in the occupation of the enclosure.
and second and	Indicates that the maximum capacity of the enclosure or subarea has been reached.
Apparent and a second and a sec	Indicates that the alert threshold has not yet been reached in the occupation of the enclosure and that there is at least one vehicle that has exceeded the permanence time of the enclosure.
	Indicates that the alert threshold has been reached in the occupation of the enclosure and that there is at least one vehicle that has exceeded the dwelling time of the enclosure.
And the second s	Indicates that the maximum capacity of the enclosure or subarea has been reached and that there is at least one vehicle that has exceeded the permanence time of the enclosure.
4	Indicates that there are 4 vehicles that have exceeded the permanence time of the enclosure.

It is possible to view the set of license plate readings of a enclosure or subarea; To do this, it is necessary to click on the vehicle icon. Doing so displays a panel on the right side with the following information:

- Name of the selected venue and its occupation.
- Drop-down list with subareas (if the enclosure has them).
- Number of readings that exceed the permanence time (in red) vs. number of recorded readings.
- List of license plate readings ordered by date and time of entry (registration, date and time, length of stay).



Recinto A [7 / 1000]
•
[<mark>4</mark> / 5]
9876BCD - 06/07/2022 14:40:53 - 03:58
9876BCb - 06/07/2022 14:41:23 - 03:58
9876BCa - 06/07/2022 14:41:31 - 03:57
9876BCH - 06/07/2022 14:41:40 - 03:57
9876WRT - 06/07/2022 18:38:19 - 00:01

The panel displays a button bar at the top. These buttons allow the performance of two different actions:

- Allows the extraction of the data displayed on the panel.
- Allows closure of the side panel.

Icono	Descripción
	It allows the extraction of the data displayed in the right side panel in CSV format.
×	It allows you to close the side panel.

The name of the extracted file complies with the following format:

<Extraction date and time>_<Enclosure>_<Subarea>_(<user>).csv

- Extraction date and time: It contains the date and time in which the data extraction is performed and has the following format: YYYY-MM-DD_HHMMSS.
- Enclosure: Contains the name of the enclosure.
- Subarea: Contains the name of the selected subarea.
- User: Contains the name of the user who performs the extraction.

Visualization of statistics in the dashboard

From Smart Client it is possible to view statistics in the "Extended LPR Dashboard" tab or by embedding the control in the "Live" tab.

This view consists of a drop-down to select a enclosure and a series of components that display different statistics about the entries and exits registered for that enclosure.



Recinto:	Parking superficie	•	
	Parking superficie		
	Parking subterraneo		
	Últimos 30 días		

Milestone XPr	rotect Smart Client									- 0 >
Live	Playback	Exports Se	arch 🛛 Alarm Manager 🕼 LPR	Enclosures and subareas	tended LPR Dashboard	System Mor	nitor		423.01 PM	+ 0 f
										Setup
Recinto:	Parking superfici									
			Este mes	Últimos 7 días	Esta si	mana	Ayer	Últimas 24 horas		
							Franks: 274 (50 5595)			
0021H00		España	12/18/2022 4:35:00 PM	12/19/2022 3:24:00 AM	649		caparine and (successful)			
0021W1		Francia	12/17/2022 6:35:00 AM	12/17/2022 5:29:00 PM						
0048HO	R	España	12/14/2022 4:13:00 PM	12/15/2022 1:47:00 PM	1294					
0052NX0		España	12/14/2022 9:33:00 PM	12/15/2022 6:36:00 AM						
0061KEF		España	12/17/2022 6:57:00 PM	12/18/2022 12:43:00 AM						
0073U8V	N	España	12/18/2022 8:03:00 AM	12/19/2022 7:20:00 AM						
00756GE		Francia	12/18/2022 5:01:00 PM	12/18/2022 11:54:00 PM						
0083A12		España	12/14/2022 3:08:00 AM	12/14/2022 2:47:00 PM						
0093P55		España	12/16/2022 11:40:00 AM	12/17/2022 5:13:00 AM					Francia: 268 (49.45%)	
0095800		España	12/13/2022 10:11:00 PM	12/14/2022 8:25:00 PM	1334					
0118GC2		España	12/16/2022 6:30:00 PM	12/17/2022 12:07:00 PM						
0180FE0		España	12/17/2022 5:16:00 PM	12/18/2022 6:27:00 AM						
0190D4V	N	Francia	12/14/2022 2:13:00 AM	12/14/2022 5:37:00 PM						
01996NL		Francia	12/18/2022 6:33:00 AM	12/18/2022 1:49:00 PM						
0241XUP		España	12/17/2022 7:46:00 PM	12/17/2022 11:28:00 PM						
0264E2U		España	12/14/2022 1:30:00 PM	12/15/2022 1:21:00 AM						
0290QD5		Francia	12/16/2022 3:03:00 PM	12/17/2022 11:15:00 AM						
0302UQ		España	12/17/2022 2:00:00 PM	12/18/2022 12:53:00 AM						
030414Z		España	12/16/2022 1:08:00 PM	12/17/2022 6:47:00 AM						
0324J4F			12/13/2022 6:05:00 PM	12/14/2022 1:35:00 AM						
Recuent	0 - 342									

By placing the mouse pointer in the upper right corner of the panel, a button will appear that allows you to export the data being displayed in different formats.



Clicking on that button will bring up a menu to select the export format. Available options are PDF, Image and Excel



Selecting any of these options will open a modal window to configure some export parameters.



Export To Excel	- Group 1	×
Nombre de archivo:	Group 1	
Formato Excel:	XLSX	-
Separador:		
Incluir:	Filtros	
	Parámetros	
Posición:	Por debajo de	
Restablecer	Exportar	Cancelar

Each of the panels that make up the dashboard have a button in the upper right corner to maximize and another to export only that panel.



The functionality of the export button is identical to the one explained above, but it will only export the selected panel.

The maximize button will expand that panel to fill the entire size of the screen.



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.

Decoder not recognised

Check that the configuration of the decoder, its user, password and IP address are correct. If the login could not be carried out correctly, it is necessary to change the credentials to be able to make a new attempt.

Database encryption

If you use the database encryption feature from Milestone, this plugin will not work, as it is not compatible with that feature.

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 <u>sat@sgse.eu</u>.