

SGSE

Soluciones Globales de Seguridad Electrónica

MONITOR SPC

Installation and user manual

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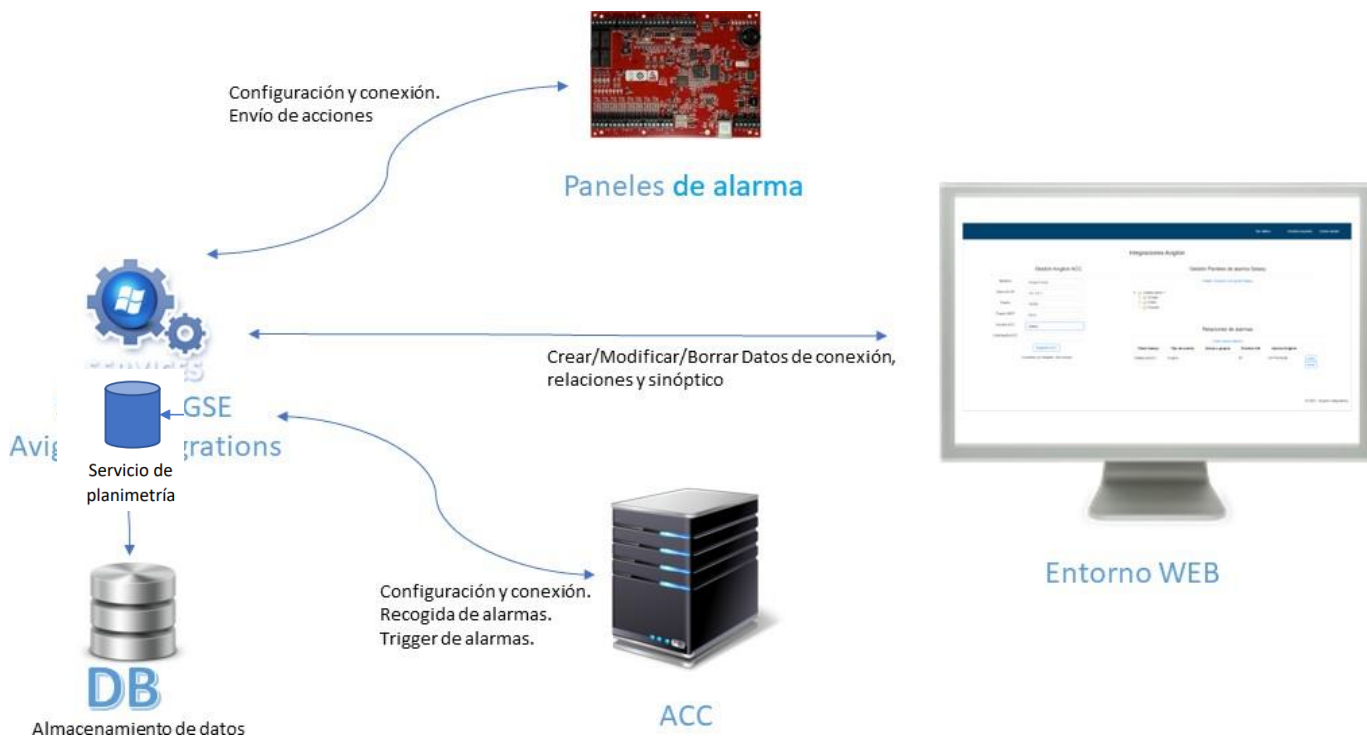
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1. Document versions

Version	Date	Author	Version description
1.0	09/2023	JAFUNES	First version
1.1	03/2024	JAFUNES/JCR	SPC adaptation

2. Introduction

Monitor SPC is an application that allows us to fully integrate SPC intrusion panels, in any of their models, as part of the Avigilon Unity platform, allowing us to create relationships between alarms created in Avigilon and events generated by SPC intrusion panels.



Moreover, the SPC Monitor is interactive, allowing actions to be taken on partitions, zones, and outputs configured in the different SPC panels through a synoptic panel, which also helps us verify the panel's status in real-time. The solution is complemented by a web service that enables graphical representation of the various devices integrated into one or multiple floor plans, as well as their statuses, allowing interaction with them.

3. Required Resources

Below, the resources required by the application are described.

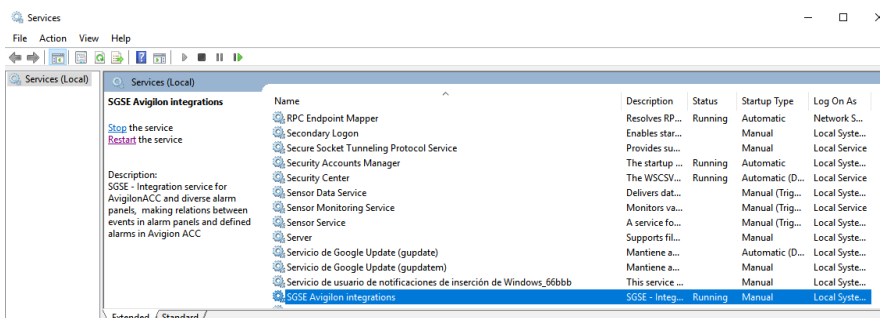
Item	Description
License	License for each panel and element number
CPU	Minimum i3 1 Core or similar
Operating system	Windows 10 minimum
Storage	300MB minimum
RAM	8Gb minimum
ACC version	ACC7 or higher
SQL	SQL 2019 or higher

4. Architecture

The application is presented in two distinct environments:

- **Avigilon Integrations Service**

Main integration application that stores all registered data, initializes communications with alarm panels, connects with ACC, and manages the relationships between ACC alarms and panel events to trigger said alarms, which can then be managed from the ACC client.



- **Management Application in a Web Environment**

Web application serving as a management interface between intrusion panels and the ACC platform, allowing for the creation, modification, updating, and deletion of relationships between panel events and ACC alarms.

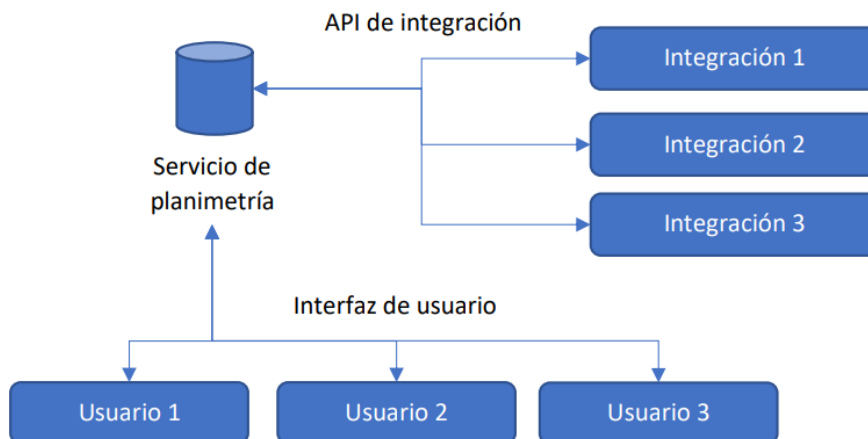


The web management application will not function if the Avigilon Integrations service is not active.

It is always necessary to verify that the service is running and functioning so that the web management application can display all information.

- **Floor plan service**

The architecture of the solution is described in the following diagram.



On one hand, the web service exposes an integration API that is used to transmit data about the devices to be integrated to the floor plan service. On the other hand, it exposes a user interface through which plans can be created and devices registered through the integration API can be represented.

5. Installation

Installation of Avigilon Integration SGSE Service

Before beginning the installation, we need to have the following software installed on our computer:

- Internet Information Services (IIS)

[Plan an ASP.NET Website on IIS | Microsoft Learn](#)

- SQL Server 2018 (or later)

[SQL Server Downloads | Microsoft](#)

- SQL Server Management Studio (2018 or later)

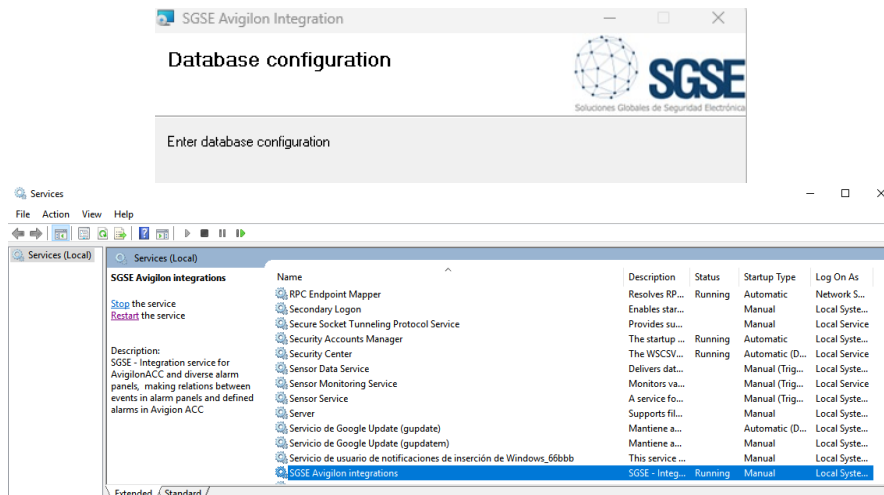
[Download SQL Server Management Studio \(SSMS\) - SQL Server Management Studio \(SSMS\) | Microsoft Learn](#)

Once we have both software installed, we can proceed with the installation of the service.

First, we execute the installation MSI file:



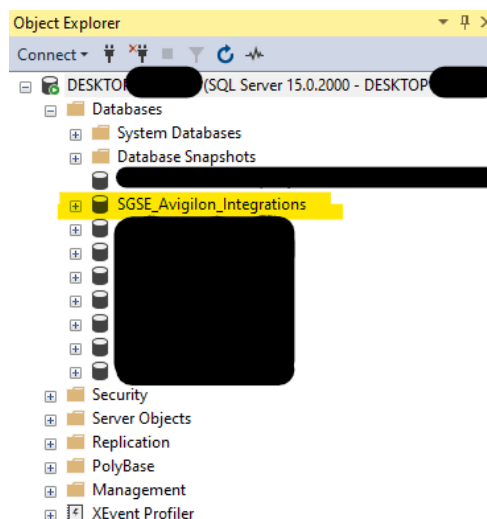
We select the installation path for the database tables by entering the connection string of the database where everything will be installed:



Once completed, we confirm the installation. After completion, the service will appear in the Windows services. We can access them by pressing "windows + R" keys and executing the command "services.msc", or by searching for the "Services" application in the "Start" menu.

In addition to creating the service, the installer generates a new database and an application in Internet Information Services (IIS), which are necessary for the proper functioning of the integration. We can verify the creation of both in the following programs:

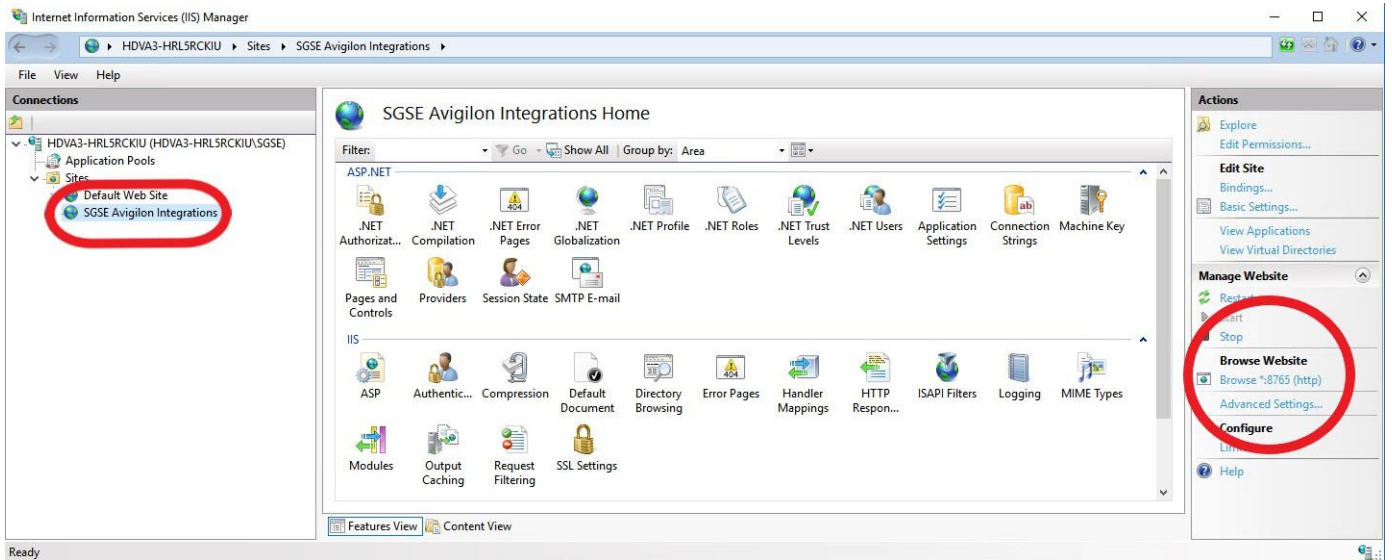
QL Server Management Studio (SQL Database Management Tool):



We access the server configured in the installation with SQL Server Management Studio. Upon logging in, we will see that the SGSE_Avigilon_Integrations database has been created under the Databases section

Internet Information Services:

Open Internet Information Services (IIS) and verify that the web application has been created. Under the "Sites" section, you will find the application named SGSE Avigilon Integrations. In the left section (Browse Website), you can verify that the service is running on port 8765.



Test the new site created by browsing the website from IIS. If everything works correctly, you will see the login page of the application in your default web browser.

Iniciar sesión

Nombre de usuario

Contraseña

¿Recordar cuenta?

La licencia no es válida para este equipo.
Proporcione el siguiente UID a SGSE para que se genere su licencia

1SLYO71-166Q8VB-1ICOZD5-1WGMK53



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The application will only work with a valid license generated by SGSE. The user needs to provide SGSE with the code that appears on the screen called "UID," and SGSE will provide the license.



Iniciar sesión

Nombre de usuario

Contraseña

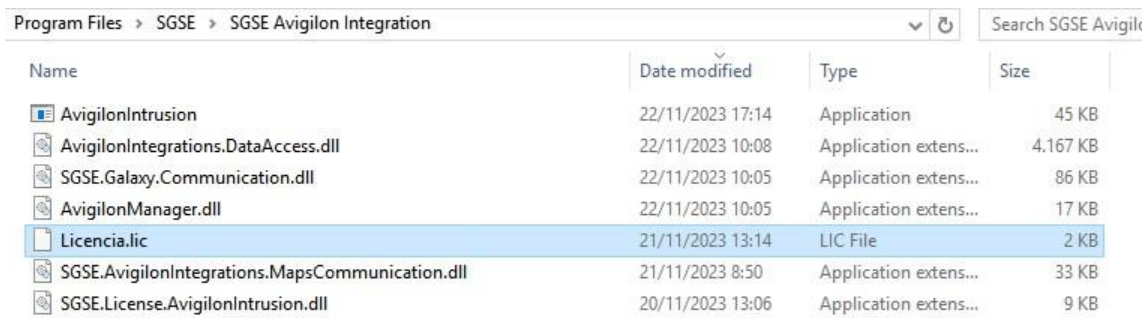
¿Recordar cuenta?

Iniciar sesión



AVIGILON™

Once you receive the license, it needs to be included in the folder "C:\Program Files\SGSE \SGSE Avigilon Integration" or in the chosen default directory if its location has been changed.



Name	Date modified	Type	Size
AvigilonIntrusion	22/11/2023 17:14	Application	45 KB
AvigilonIntegrations.DataAccess.dll	22/11/2023 10:08	Application extens...	4,167 KB
SGSE.Galaxy.Communication.dll	22/11/2023 10:05	Application extens...	86 KB
AvigilonManager.dll	22/11/2023 10:05	Application extens...	17 KB
Licencia.lic	21/11/2023 13:14	LIC File	2 KB
SGSE.AvigilonIntegrations.MapsCommunication.dll	21/11/2023 8:50	Application extens...	33 KB
SGSE.License.AvigilonIntrusion.dll	20/11/2023 13:06	Application extens...	9 KB

After completing the above steps, it is necessary to restart the service for the license reading to take effect and the service to function.

Installation of Floor Plan Service:

To install the service, simply run the "SGSE Maps Service Installer.msi" installer provided by SGSE with administrator permissions. The process is automatic. Throughout the different screens of the installer, you will need to accept the End User License Agreement, which is a mandatory condition to use the plugin, and specify the connection string to a SQL Server database server that will be used to create a database and a user for it. Let's see the different screens that will appear during the installation process of the mentioned applications.



Click on "Next >" to begin the installation.



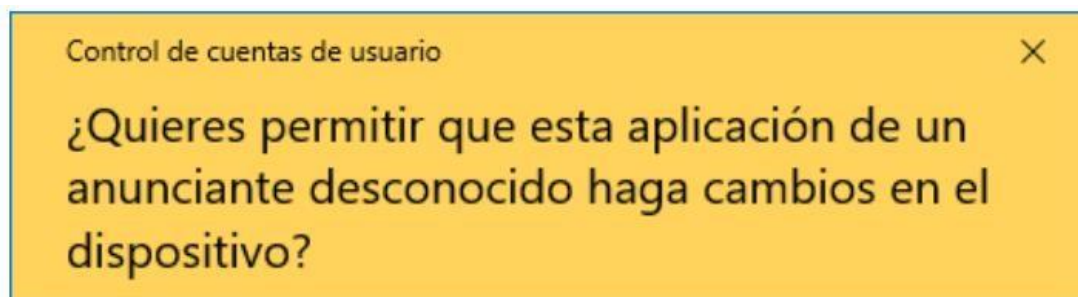
You will need to read and accept the End User License Agreement to proceed with the installation.



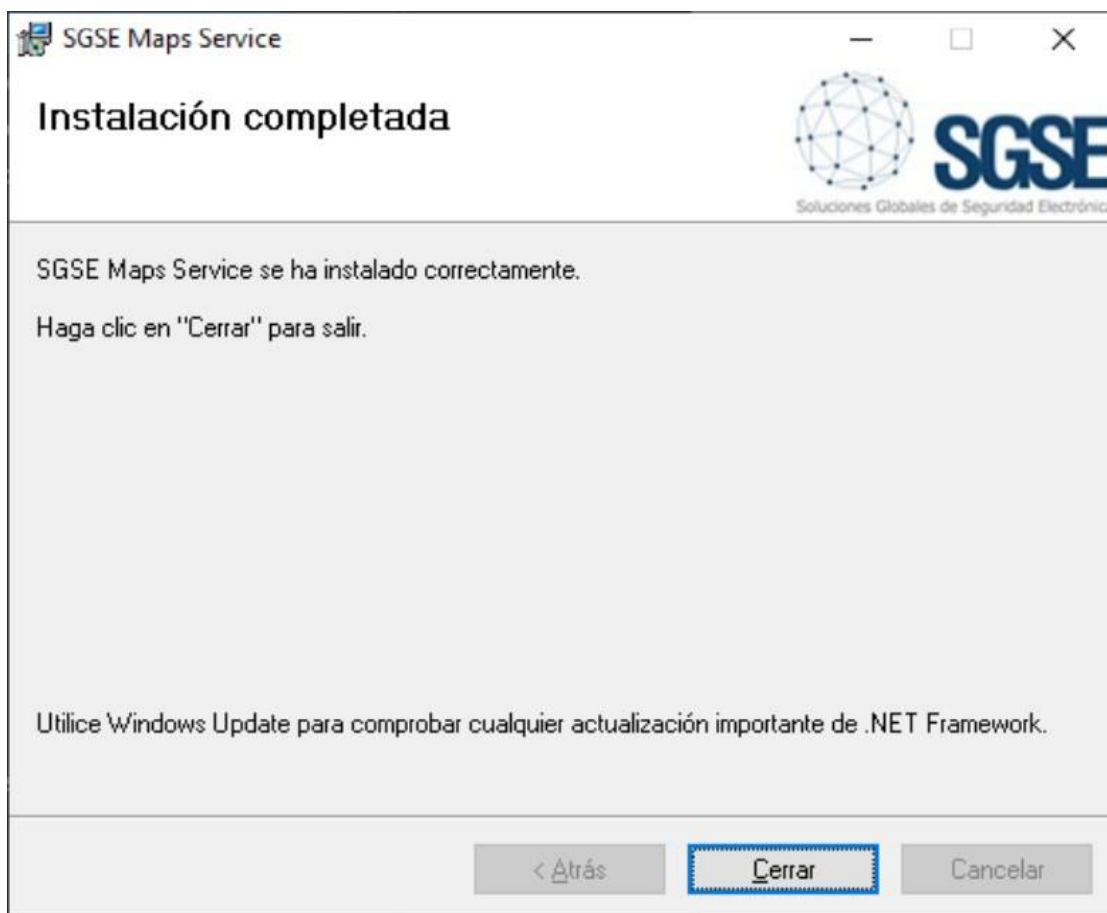
Click "Next >" to continue.



On this screen, enter the connection string or leave the default one if applicable, and click "Next >" to proceed with the installation of the corresponding software files.

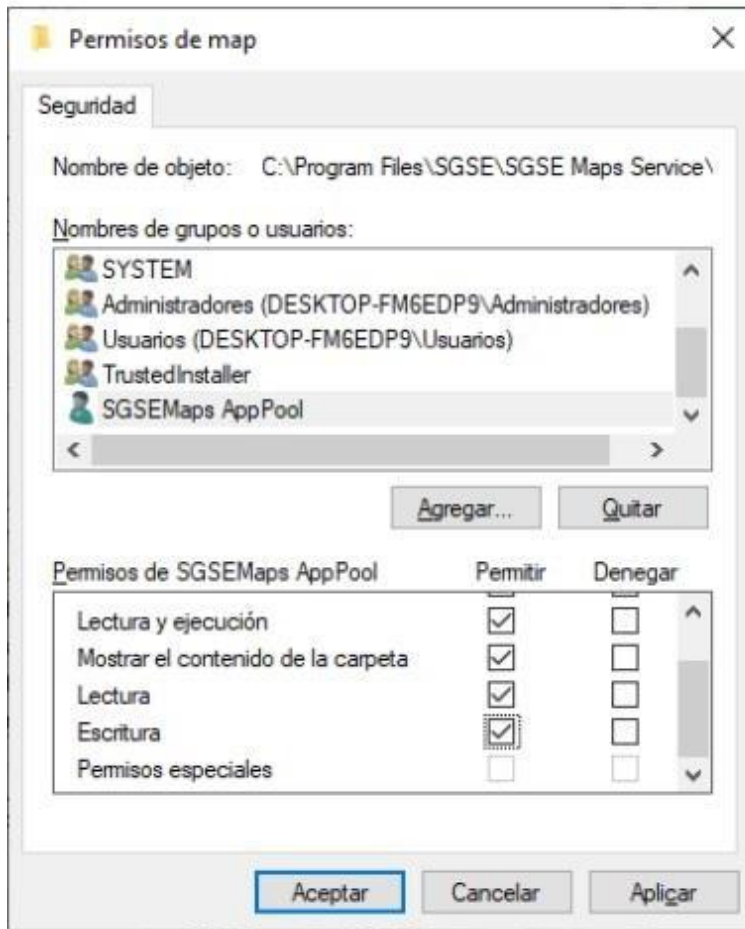


If Windows User Account Control prompts you, allow the installer to continue with the installation.



Once the installation is complete, click on "Close," and the service will be installed.

To ensure the service functions correctly, it's necessary to assign write permissions to the directory "C:\Program Files\SGSE\SGSE Maps Service\wwwroot\img\map" to the user "SGSEMaps AppPool."



6. Configuration

The plugin has been designed to simplify as much as possible its configuration process, so that the start-up is as simple as possible for the installer.

The connection is actively established by the SPC intrusion panel using the FlexC[®] protocol, so it will have to be configured to establish a connection with the plugin, and the plugin will have to be ready to accept and confirm this connection.

6.1 SPC Panel configuration

In order to communicate with the plugin, it has to be configured as an ATP of an ATS in the SPC configuration. We will give a brief overview of the specific configuration needed to communicate with the plugin. For further information on installation, setup, and configuration of the SPC panel please contact your SPC provider.

- 1) Add an ATP to an ATS
- 2) Configure ATP:
 - Set “RCT URL or IP Address” with the Milestone Event Server IP
 - Set “RCT TCP Port” with the port in which the plugin will be listening for this panel to connect.

RCT Identification		
RCT ID	<input type="text" value="1"/>	The unique ID of the RCT (e.g. RCT ID of SPC ComXT) (1-99999999)
RCT URL or IP Address	<input type="text" value="192.168.1.50"/>	URL or IP address of the RCT (e.g. SPC ComXT)
RCT TCP Port	<input type="text" value="52000"/>	The TCP Port of the RCT (e.g. The TCP Port that SPC ComXT is listening on)

- Select the communication interface “Ethernet”
- Select the ATP category “Cat 5 [Ethernet]”

ATP Interface		
Communications Interface	<input type="text" value="Ethernet"/>	Interface used by ATP for communication
ATP Category	<input type="text" value="Cat 5 [Ethernet]"/>	Select the The ATP category

- 3) In the “ATP Advanced configuration”:
 - Select Encryption Key mode “Fixed Encryption”
 - Set the fixed encryption key. It must match the encryption key configured at the plugin (64 hexadecimal digits).

SGSE Avigilon Integration Service Configuration

Firstly, it's necessary to create an administrator user. This can only be set the first time the service is run, and its information can be modified afterward.

Access the site created in IIS (by default, <http://localhost:8765>) and click on the link "Register as a new user."

Iniciar sesión.

Nombre de
usuario

Contraseña

¿Recordar cuenta?

Iniciar sesión

[Registrarse como usuario nuevo](#)

Create a new user by filling out the form, then click the "Register" button.



Crear una cuenta nueva.

Nombre de
usuario


Contraseña

Confirmar
contraseña

Registrarse

With the administrator user's data set, we can access the main configuration page of the service.

First, we need to connect to our Avigilon Control Center by adding the connection details.



Ver status Gestión usuarios Cerrar sesión

Integraciones Avigilon

Gestión Avigilon ACC

Nombre

Dirección IP

Puerto

Puerto WEP

Usuario ACC

Contraseña ACC

[Registrar ACC](#)

Conexión con Avigilon: No registrado

Gestión Paneles de alarma

[Añadir conexión con panel de alarmas](#)


Relaciones de alarmas

[Crear nueva relación](#)

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Add the details and click the "Register ACC" button.

Then, proceed to add a connection to an SPC panel by clicking on the link "add connection to alarm panel."



Ver status Gestión usuarios Cerrar sesión

Integraciones Avigilon

Gestión Avigilon ACC

Nombre

Dirección IP

Puerto

Puerto WEP

Usuario ACC

Contraseña ACC

[Registrar ACC](#)

Conexión con Avigilon: No registrado

Gestión Paneles de alarma

[Añadir conexión con panel de alarmas](#)

Relaciones de alarmas

[Crear nueva relación](#)

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Configure the different SPC panels depending on the panel model and communication type.

Añadir nuevo panel Cancelar

Tipo de panel
SPC

Nombre panel

Puerto de escucha

Clave de encriptación

Usuario

Contraseña

Número de keypads

Número de expansores

Añadir

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With both sections completed and connections made, both with ACC and an SPC panel, we can establish alarm relationships in the "Relationships" section.

Ver status Gestión usuarios Cerrar sesión

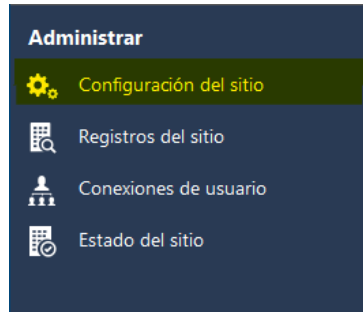
Integraciones Avigilon

Gestión Avigilon ACC	Gestión Paneles de alarma
Nombre	Añadir conexión con panel de alarmas
Dirección IP	
Puerto	
Puerto WEP	
Usuario ACC	
Contraseña ACC	
Registrar ACC	Relaciones de alarmas Crear nueva relación
Conexión con Avigilon: No registrado	

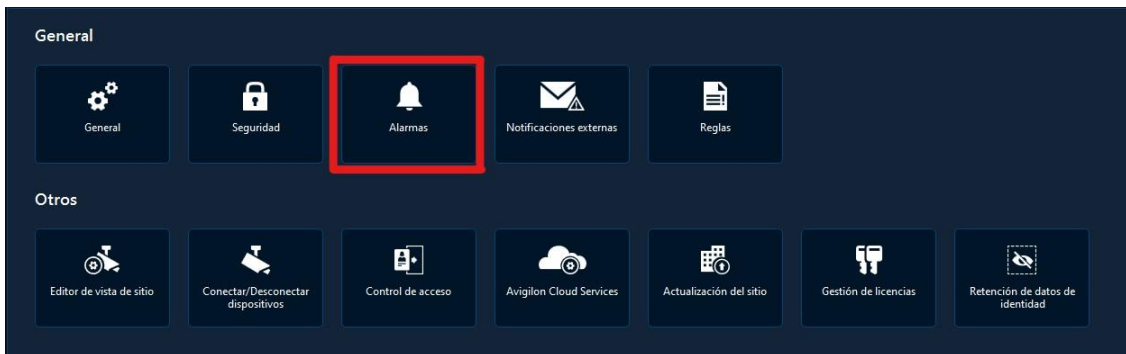
© 2024 - Avigilon integrations

For the relationships to be established, it's necessary to first create alarms in the Avigilon platform.

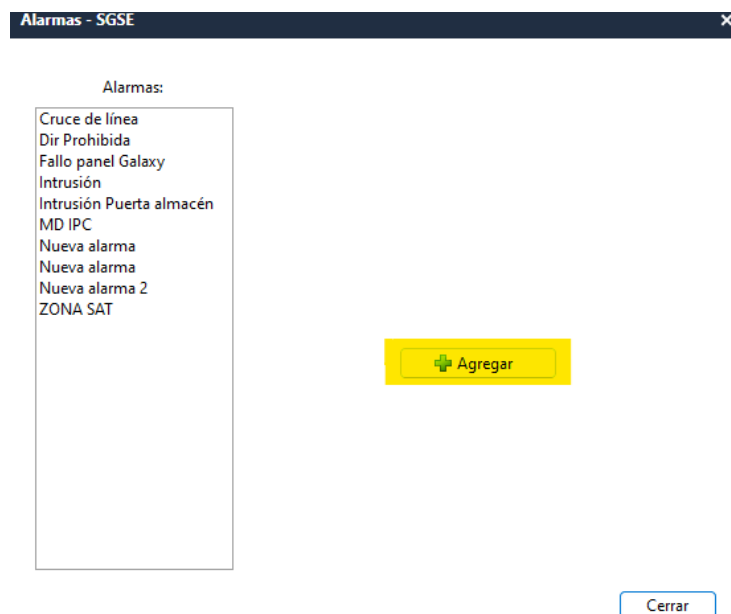
Access the site configuration:



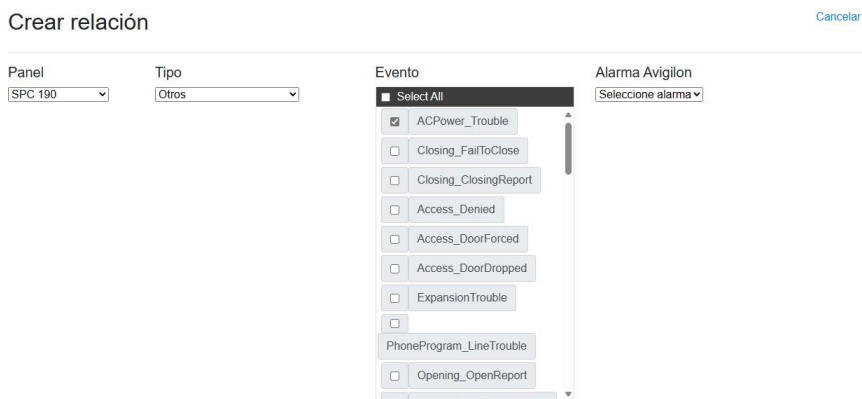
Access alarm management:



Then follow the steps to generate a new alarm:



Once alarms are parameterized in Avigilon, we can proceed with creating relationships. Select which event from the SPC panels will trigger alarms in Avigilon.



Crear relación Cancelar

Panel	Tipo	Evento	Alarma Avigilon
SPC 190	Otros	<input checked="" type="checkbox"/> Select All <input checked="" type="checkbox"/> ACPower_Trouble <input type="checkbox"/> Closing_FailToClose <input type="checkbox"/> Closing_ClosingReport <input type="checkbox"/> Access_Denied <input type="checkbox"/> Access_DoorForced <input type="checkbox"/> Access_DoorDropped <input type="checkbox"/> ExpansionTrouble <input type="checkbox"/> PhoneProgram_LineTrouble <input type="checkbox"/> Opening_OpenReport	Seleccione alarma

Configuration of the "Floor Plan" Web Service

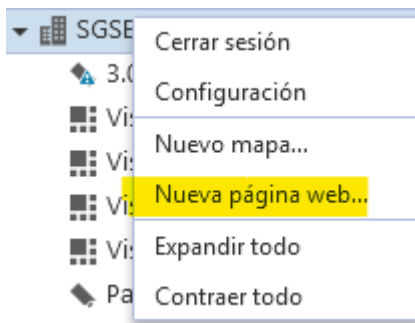
By default, the web service will have the following configuration values:

Database connection string: By default, it will try to connect to the local machine with the credentials created during installation. This connection string can be changed in the appsettings.json file located at "C:\Program Files\SGSE\SGSE Maps Service".

7. Operation

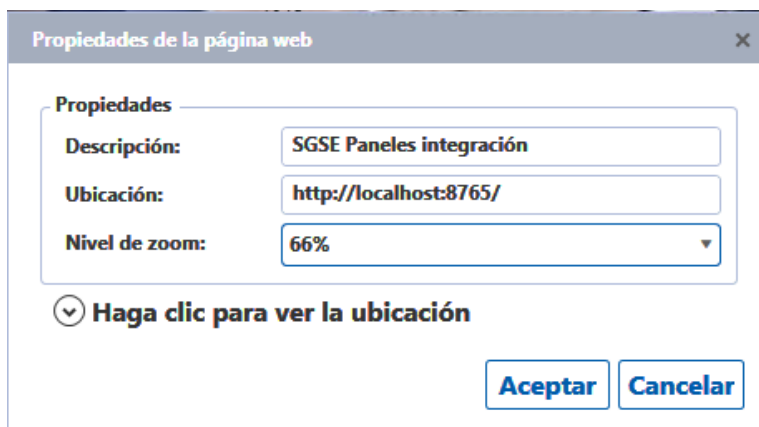
Operational on the Avigilon platform:

In ACC, we can establish multiple views that load a web page, on which we can configure the access URL of our management application.

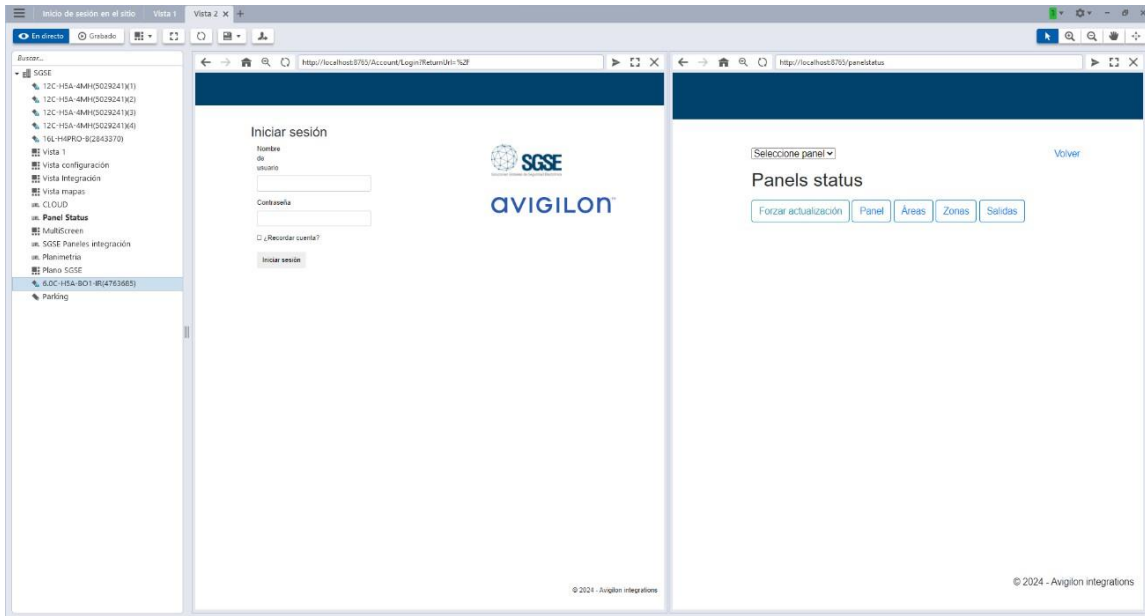


In the "Location" text, change the URL to access our service.

Thanks to this action, we will see all alarm panel management from ACC.



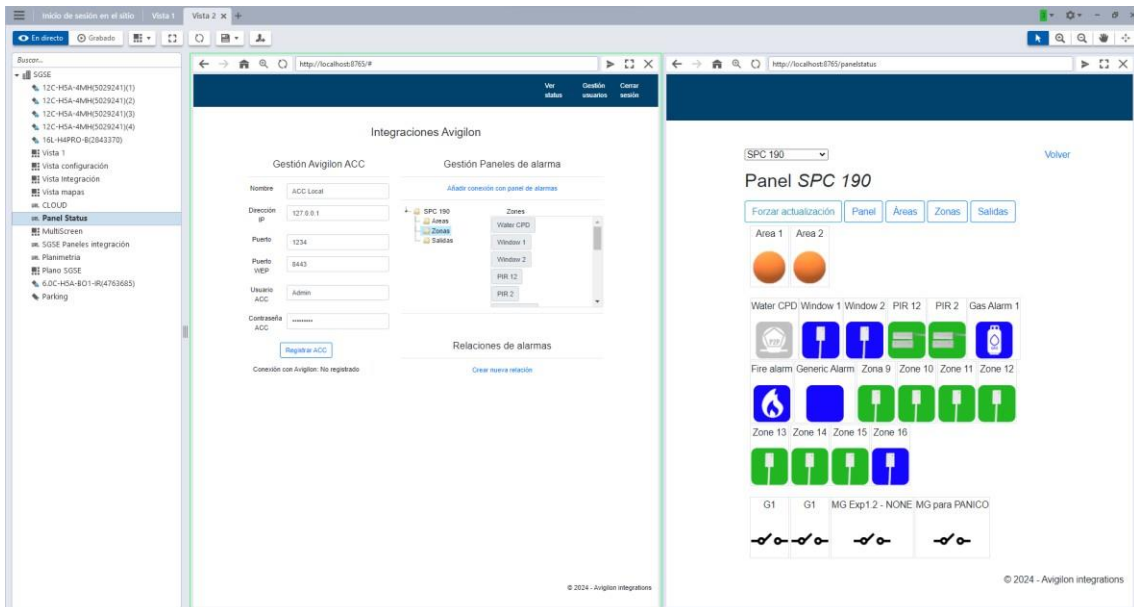
With the view established, we can drag it to one of the quadrants to display the information.



To access the synoptic view showing the alarm panel states, simply enter the URL:

<https://{address or DNS}:8765/Panelstatus>

In this view, we will see the current state of the zones, groups, and outputs configured in the panel, and we can perform actions on these elements.



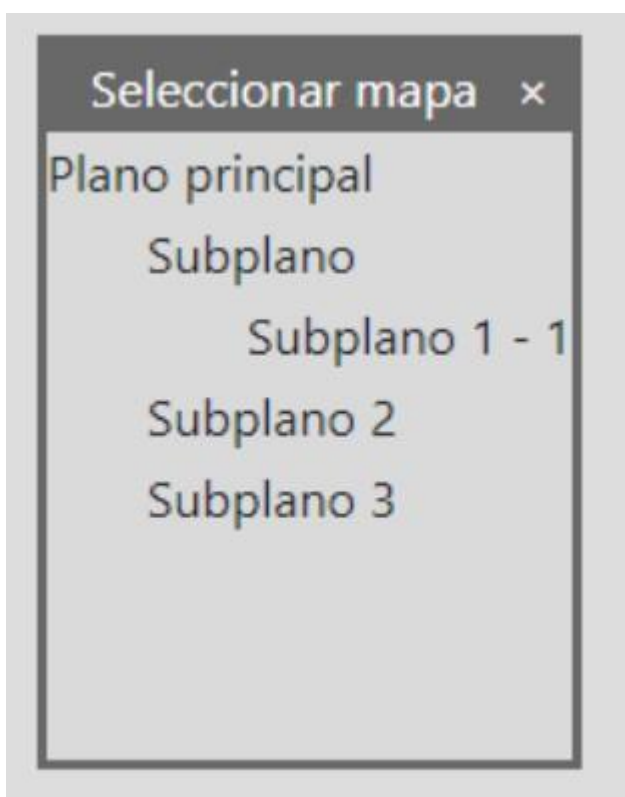
Operating with the Floor Plan Manager

The application can be accessed via the URL `http://<server_address>/SGSEMaps/` or embedded within another application. If the user is not authenticated, they will be shown a login screen where they can identify themselves with a username and password.

By default, there will be an admin user with the password Admin-123. There are two user profiles: administrator and user.

User profile

If the user accesses the user interface without specifying any floor plan, a popup window will appear to select which floor plan to use as the main plan.


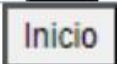




Once a floor plan is selected, the selected plan will be displayed on the screen.

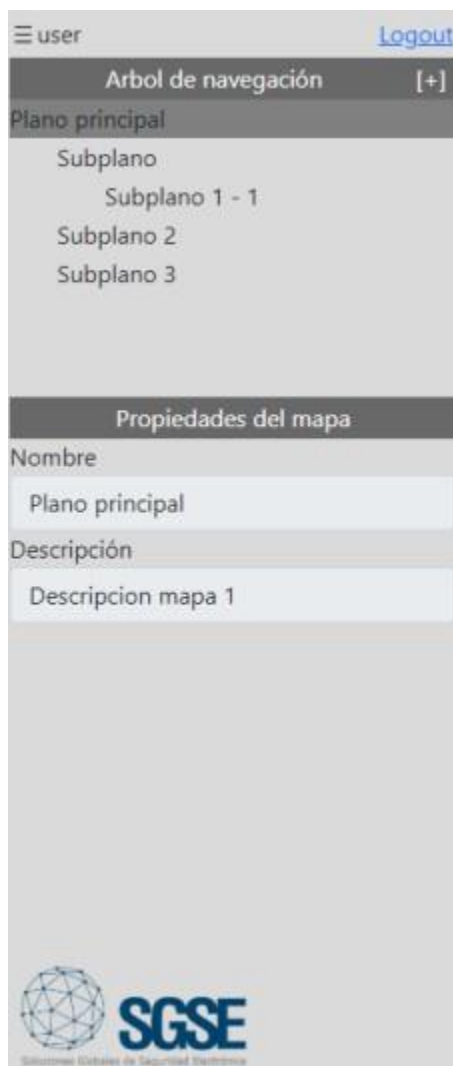


Navigation Buttons

In the upper-left corner, the following buttons are located:

	Muestra u oculta el panel lateral
	Sitúa la navegación en el plano inicial
	Sitúa la navegación en el plano anteriormente seleccionado
	Sitúa la navegación en el siguiente plano si anteriormente se usó el botón de atrás

Side panel



The side panel will display user information, as well as the navigation tree containing the main floor plan and its sub-plans.

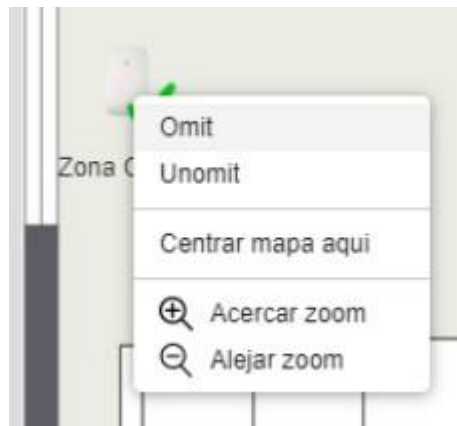
Clicking on the **[+]** button will close the current navigation tree and display a popup window to select a new main floor plan.

In the navigation tree, the names of the floor plans may appear marked with a color depending on the state of the devices contained in that map.

Below the navigation tree, information associated with the currently selected floor plan will be displayed.

Within de map

Within the map, there can be two types of elements: devices themselves and hot zones. Devices are classified by type and may have commands. To send a command to a device, hover the mouse over the icon and right-click the mouse button. A contextual menu with various actions will appear.



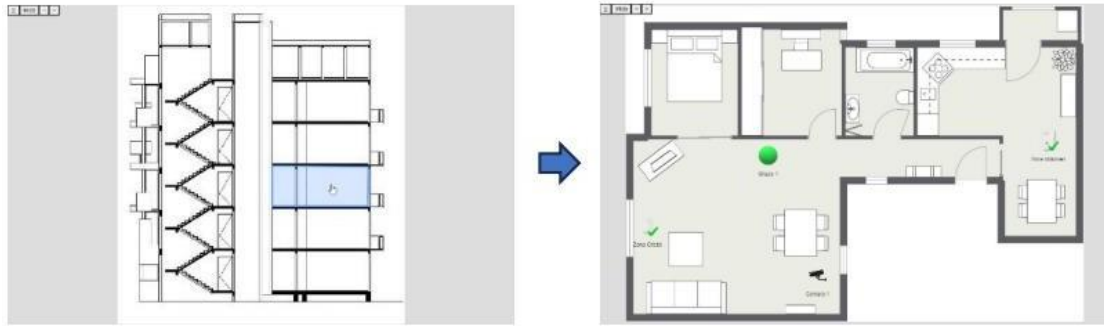
Upon pressing one of the actions, an indicator will appear over the icon to show that the command has been sent, and it will disappear when the action is completed.



If the device supports video preview, hovering the mouse over it will display a live image.

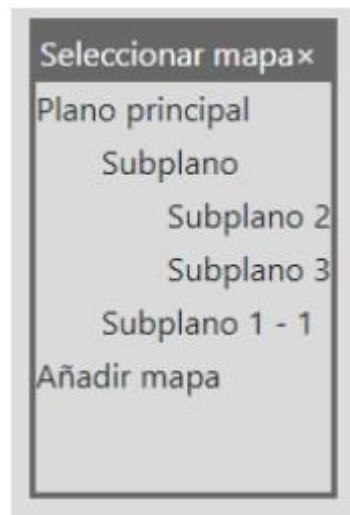


Hot zones represent an area on the floor plan and allow navigation to that plan by clicking on them.



Administrator profile

The administrator profile has all the functionalities of the user profile, but it also has tools for creating and modifying floor plans. Both the popup window and the navigation tree will have the option to add a new floor plan



Clicking on "Add Map" will create a new map that will be a child of the currently selected plan. If created in the popup window, it will become the main plan.

Once a plan is selected, it will be displayed on the screen with an interface similar to that of the user profile.

Side panel

Within the side panel, in the map properties section, there will be an option for the background image, allowing selection of a new image for the floor plan background. The image will not be set until the plan is saved.



Editing Mode

In the upper-right corner, the **Editar** button will appear. Clicking on it will activate editing mode for the currently selected map.

In editing mode, the **Editar** button will be replaced by the following buttons:

Borrar	Elimina el plano actual
Descartar	Descarta los cambios efectuados en el plano y sale del modo edición
Guardar	Guarda los cambios efectuados en el plano y sale del modo edición

Additionally, a tool window will appear to add new elements to the floor plan.



The content of this window depends on the different types of devices specified through the integration API.

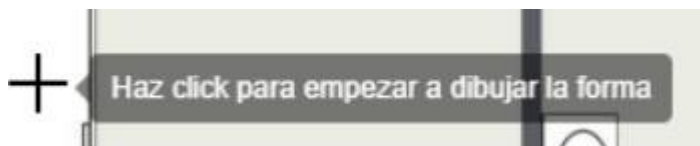
Clicking on one of the types will bring up another window with a list of registered devices of that type.



From this window, a device can be dragged to the area of the floor plan where it should be placed. To delete an element from the plan, click on it and then press the delete key on the keyboard.

The "Hot Zone" option is independent of the integration, and its operation is as follows:

After clicking on the "Hot Zone" button, the mouse cursor will become a crosshair, and the following message will appear alongside it.



In this mode, polygonal areas can be defined by clicking multiple times on the plan. It is mandatory to select the first point created as the last point to close the polygon. Once the polygon is created, clicking on it will display boxes at the vertices that allow modification of the polygon. Like with icons, the polygon can be deleted by pressing the delete key on the keyboard while it is selected for editing.

Right-clicking with the mouse on a polygon will display the option "Select Submap," which will open a popup window to select the map to which the user will be moved when clicking on the area.



8. Troubleshooting

The service does not seem to connect with Avigilon:

Check that the connection details are correct, including the username and password.

It does not connect to the different alarm panels:

Verify that the connection details and connection type are correct.

I cannot create relationships:

Ensure that both Avigilon is connected and that we have created different connections to the alarm panels.

Avigilon alarms do not appear when creating relationships:

Review that the connection details with Avigilon ACC are correct, including the username and password.

Check in ACC that there are created alarms to which events can be associated.

The service hangs during loading, without fully executing:

Check that communications with both Avigilon ACC and the panels are working, ports are accessible, and IP addresses are correct.

Error loading the background image:

If after selecting a background image for the floor plan, upon saving the plan you encounter the error "Error loading the background image," verify that the web service has write permissions for the directory "C:\Program Files\SGSE\SGSE Maps Service\wwwroot\img\map."

[More Information](#)

For further information, refer to the online documentation or contact SGSE via email at info@sgse.eu.