

AI Camera Plug-in

User Manual

For Milestone

About This User Manual

This manual describes how to register the **Hanwha Vision's** AI camera, how to install the **AI Camera Plug-in**, and how to search for AI analytics events for the **Milestone's Milestone XProtect** program. Please read this manual carefully before using the product for proper use.

- This document explains how to use the product based on its defaults and default screens.
- The content in this document is subject to change depending on the product software updates and company policies and to partial changes without prior notification to users.

Target Audience

The content of this User Manual is intended for users of **Hanwha Vision's** AI camera and **Milestone's Milestone XProtect** program.

- Please refer to the official **Milestone** website (<https://www.milestonesys.com>) for more information on how to install and set up the **Milestone XProtect** program.

Product Usage

Users of this product may search for object (Person/Face/Vehicle/License plate/Wisenet Road AI) detection events analyzed via the AI camera and play the video.

The **AI Camera Plug-in** is based on **Hanwha Vision's** AI camera and **Milestone's Milestone XProtect** program. Please refer to the following sites for details.

- **Hanwha Vision:** <http://www.HanwhaVision.com>
- **Milestone:** <https://www.milestonesys.com>

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Disclaimer

Hanwha Vision made its best efforts to ensure the completeness and accuracy of the information provided in this document, but nonetheless it does not guarantee them.

The user is solely responsible for the consequences of using this document. **Hanwha Vision** may change some parts of this document without a prior notice.

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Learn about AI Camera Plug-in

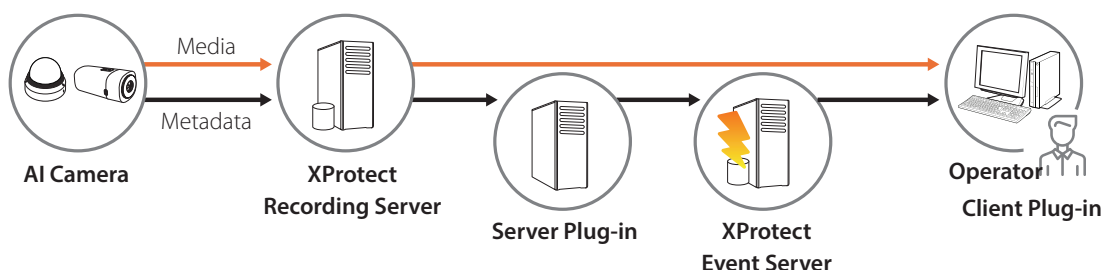
What is AI Camera Plug-in?

The **AI Camera Plug-in** uses detailed object conditions to search for object (Person/Face/Vehicle/License plate/Wisenet Road AI) detection events analyzed by the AI camera in the **Milestone XProtect** program and plays back the video.

The **AI Camera Plug-in** was developed using the Milestone MIP SDK.

Learn about AI Camera Plug-in System Configuration

AI Camera Plug-in consists of the following:



- **AI Camera:** A camera that supports AI analytics.
- **XProtect Recording Server:** Videos and data for the Milestone XProtect program are saved and managed.
- **Server Plug-in:** A plug-in that sends events analyzed by the AI camera to the Milestone Event Server.
- **XProtect Event Server:** Events of the Milestone XProtect program are managed.
- **Client Plug-in:** A plug-in that adds an AI event search menu to the XProtect Smart Client program.
- **Operator:** A PC that operates the Milestone XProtect program.

System Requirements

The following are the system requirements for running the **AI Camera Plug-in**:

- **OS:** Windows 10 64 bit
- **XProtect version:** 2020 R3 (20.3a) or higher
- **XProtect license:** Expert, Corporate

Supported Cameras

The following are the Hanwha Vision AI cameras that support the **AI Camera Plug-in**:

- P AI series
 - PNB-A9001, PNO-A9081R, PNV-A9081R, PND-A9081RV/RF
 - PNB-A6001, PNO-A6081R, PNV-A6081R, PND-A6081RV/RF
- P Multi series
 - PNM-C12083RVD, PNM-C7083RVD
- P LPR series (Wisenet Road AI)
 - PNB-A9001LP, PNO-A9081RLP, PNV-A9081RLP
- T series
 - TNB-9000, TNM-C4940TD/4950TD/4960TD
- X series
 - Check the firmware version of your camera model.

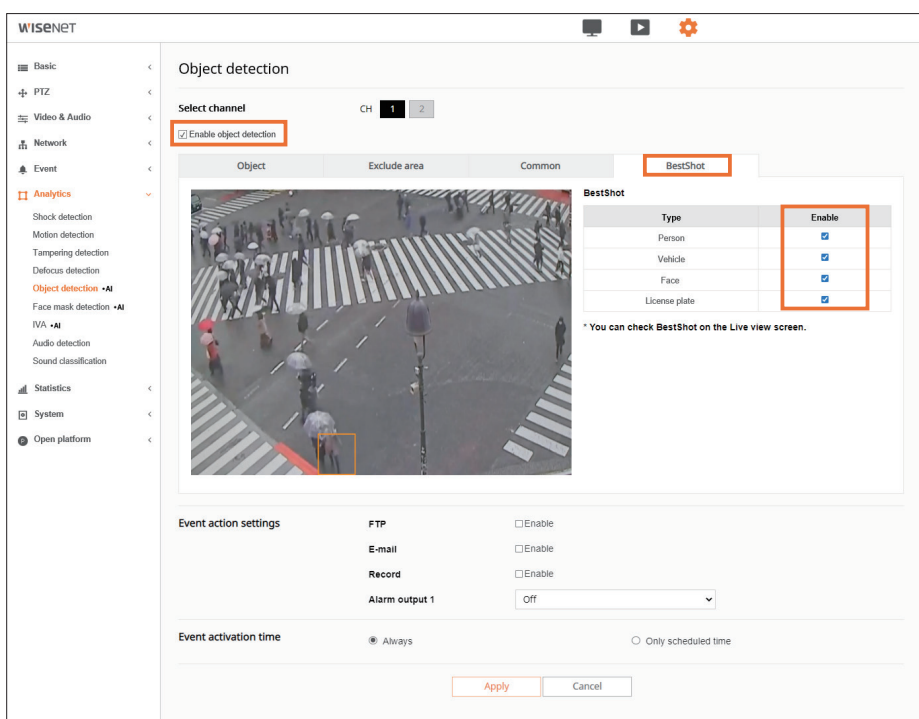
Model	Firmware version
XNB-9003, XNB-8003, XND-9083RV, XND-8093RV, XND-8083RV, XNO-9083R, XNO-8083R, XNV-9083R, XNV-8083R, XNV-8093R	XND-9083RV_2.11.01_20211210_R170 or later
XNO-6123R, XNV-6123R	XNV-6123R_2.11.01_20220107_R129 or later
XNB-6003, XND-6083RV, XNO-6083R, XNV-6083R	XND-6083RV_2.11.01_20211210_R163 or later
XND-C9083RV, XND-C8083RV, XNO-C9083R, XNO-C8083R, XNV-C9083R, XNV-C8083R	XND-C9083RV_2.11.01_20211210_R251 or later
XND-C7083RV, XND-C6083RV, XNO-C7083R, XNO-C6083R, XNV-C7083R, XNV-C6083R	XND-C7083RV_2.11.01_20211210_R233 or later

Setting up Camera

Enable AI analytics for the AI camera to run the **AI Camera Plug-in**.

In order to use the AI analytics function, **BestShot** detection must be enabled.

1. Launch the web browser.
2. Enter the IP address of the AI camera. (e.g. <http://192.168.9.107>)
3. Enter **ID** and **Password** to log in to the camera web viewer.
4. Select  **Setup** and click **Analytics**.
5. Click **Object detection** and check **Enable object detection** box.
On **BestShot** tabs, check **Enable** box for the object type you want to detect.
Click **Apply**.



WISENET

Object detection

Select channel CH 1 2

☒ Enable object detection

Object Exclude area Common **BestShot**

BestShot

Type	Enable
Person	☒
Vehicle	☒
Face	☒
License plate	☒

* You can check BestShot on the Live view screen.

Event action settings

FTP ☐ Enable

E-mail ☐ Enable

Record ☐ Enable

Alarm output 1 Off

Event activation time ☒ Always ☐ Only scheduled time

Apply Cancel

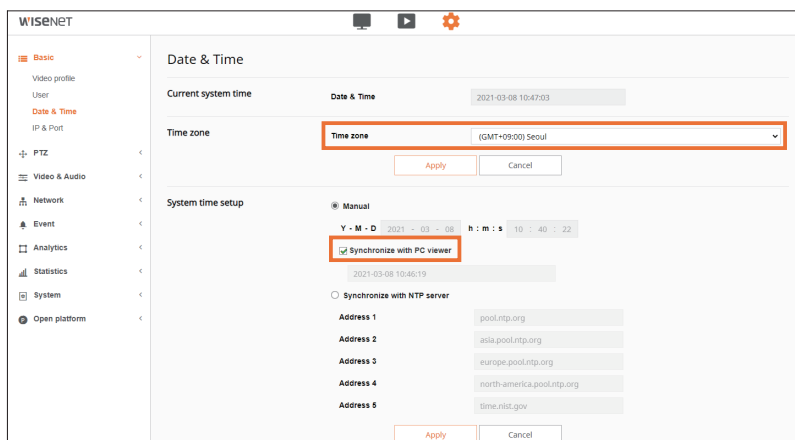


Note

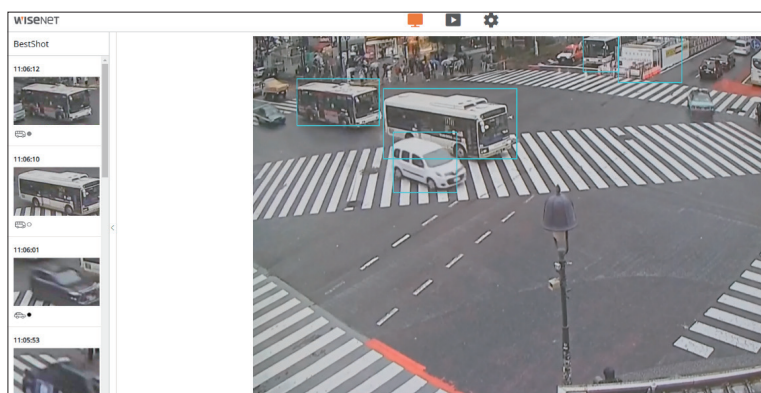
In order to use AI analytics, you must check **Enable object detection** and **Enable** boxes for the **BestShot** type you want to detect.

6. Click **Basic > Date & Time**.

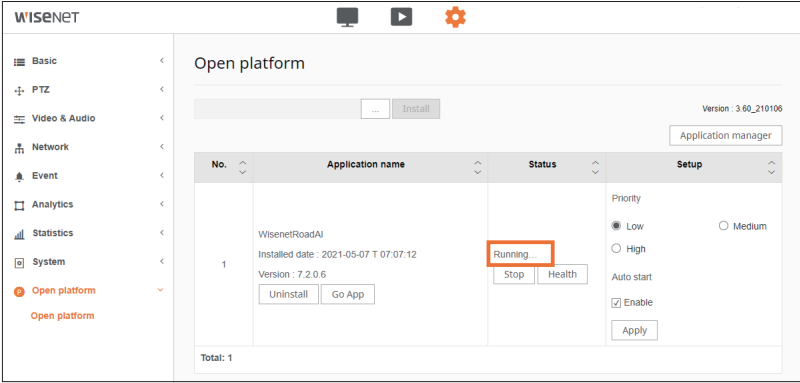
Select the **Time zone** that is identical with the Milestone XProtect Server and click **Apply**.
Check **Synchronize with PC viewer** and click **Apply**.



7. To see if AI-analyzed event detect is set, select **Live** and check the BestShot list on the left.



8. For the camera for Wisenet Road AI, check if the **WisnetRoadAI** application is running on an **Open platform**.



Note

- Please refer to the camera's User Manual for more information on the **WisnetRoadAI** application settings and operation.
- The camera for the Wisenet Road AI is supported only on Milestone Device Pack 11.7 or higher.

Registering Camera

You can register your AI camera to the **XProtect Management Client** program to use the **AI Camera Plug-in**.

You must select Hanwha protocol and enable the use of metadata.



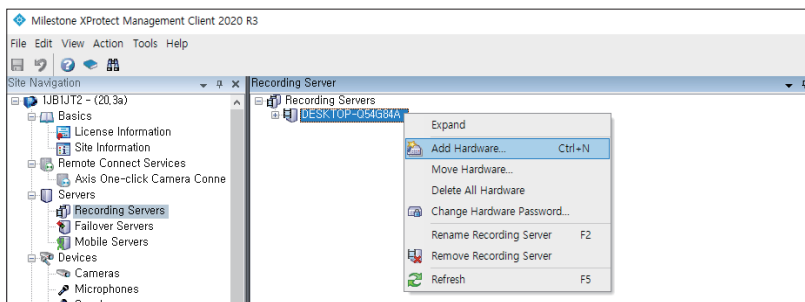
Note

To display thumbnail videos or play event videos in the event search results, recording settings must be set on the camera. For more details on recording settings, refer to the user's guide for the Milestone XProtect.

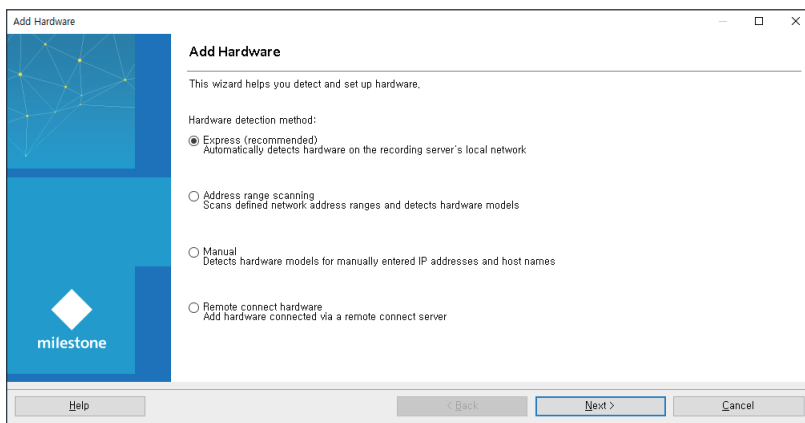
Registering the Camera Automatically

You can automatically search and register your AI camera in the **XProtect Management Client** program.

1. Launch the **XProtect Management Client** program.
2. Select **Servers > Recording Servers**.
Select **Add Hardware** from the context menu of the server.



3. Select **Express (recommended)** or **Address range scanning**, and click **Next**.



4. Enter a user name and password, and click **Next**.

Add Hardware

Specify user name and password if devices are not using the default ones.



Include	User Name	Password
☐	(Factory Default)	*****
☒	admin	*****
☒	admin	*****
☒	admin	*****
☒	admin	*****
☒	admin	*****
☒	admin	*****

5. Check if the camera has been properly registered, and click **Next**.

Add Hardware

Wait while your hardware is being detected.
Once detection has completed, select which hardware to add.



Detected hardware:

Add	Address	Port	Hardware model	Status
☒	192.168.18.17	80	Hanwha Techwin	✓ Success

☒ Show hardware running on other recording servers

6. Make sure to check the **Metadata** box to enable it.

Add Hardware

Hardware and cameras are enabled per default. Manually enable additional devices to be used.
The hardware and its devices will be assigned auto-generated names. Alternatively, enter names manually.

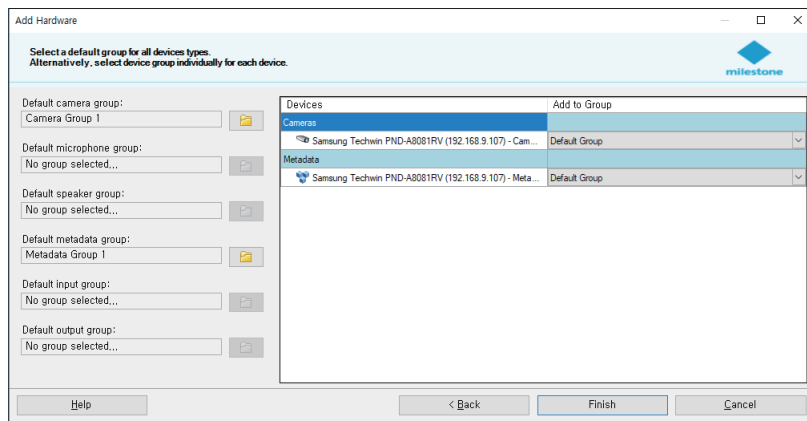


Hardware name template: Device name template:

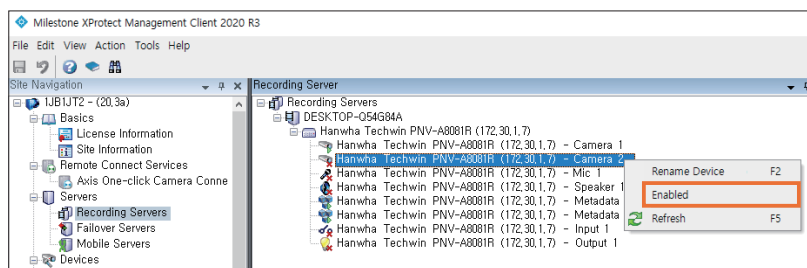
☒ Hardware ☒ Camera ☐ Microphone ☐ Speaker ☒ Metadata ☐ Input ☐ Output

Hardware to Add	Enabled	Name
Samsung Techwin PND-A8081RV - 192.168.9.107	☐	
Hardware:	☒	Samsung Techwin PND-A8081RV (192.168.9.107)
Camera port 1:	☒	Samsung Techwin PND-A8081RV (192.168.9.107) - Camera 1
Microphone port 1:	☐	Samsung Techwin PND-A8081RV (192.168.9.107) - Microphone 1
Speaker port 1:	☐	Samsung Techwin PND-A8081RV (192.168.9.107) - Speaker 1
Metadata port 1:	☒	Samsung Techwin PND-A8081RV (192.168.9.107) - Metadata 1
Input port 1:	☐	Samsung Techwin PND-A8081RV (192.168.9.107) - Input 1
Input port 2:	☐	Samsung Techwin PND-A8081RV (192.168.9.107) - Input 2
Input port 3:	☐	Samsung Techwin PND-A8081RV (192.168.9.107) - Input 3

7. Select a group which a device or a device group will belong to. Click **Finish** to complete the camera registration.



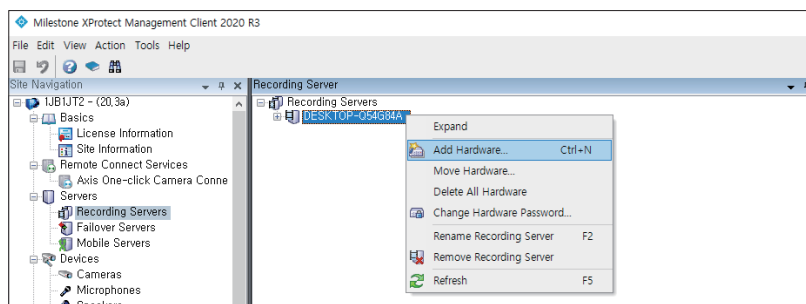
8. If the second camera or metadata has been activated, click ☒ **Enabled** in the context menu. The check box will disappear when disabled.



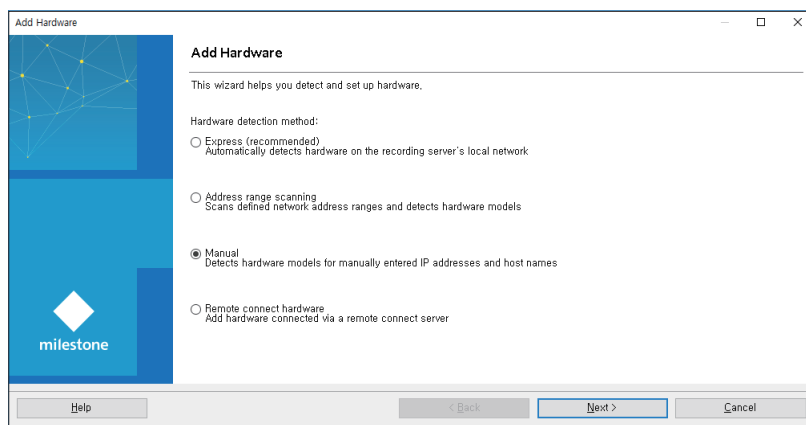
Registering Camera Manually

You can manually enter and register your AI camera's IP address in the **XProtect Management Client** program.

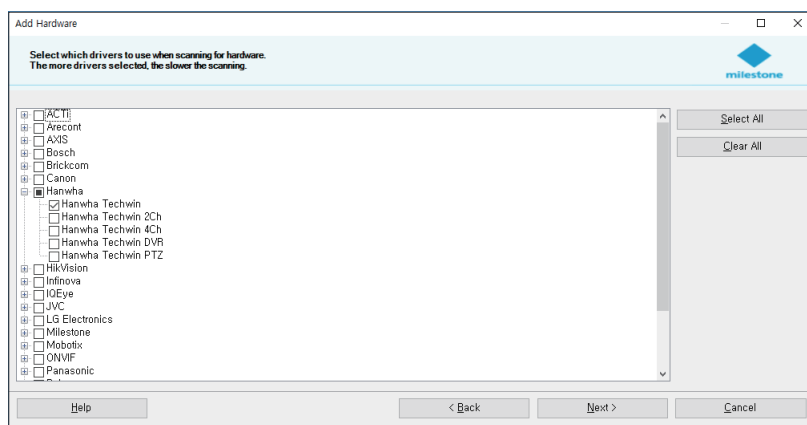
1. Execute the **XProtect Management Client** program.
2. Select **Servers > Recording Servers**.
Select **Add Hardware** from the context menu of the server.



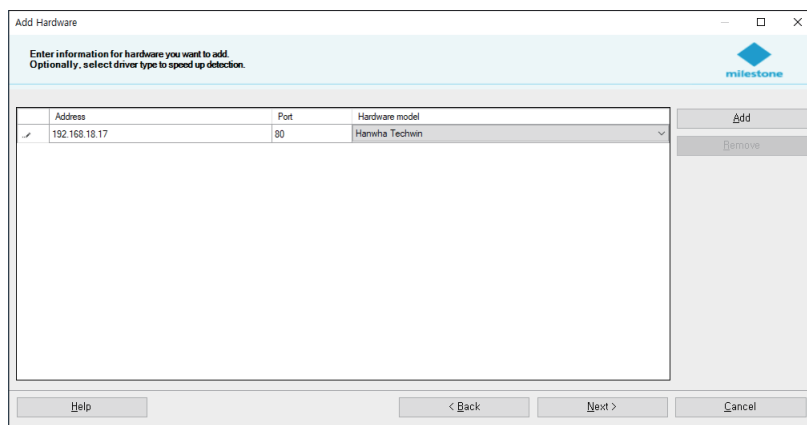
3. Select **Manual**, and click **Next**.



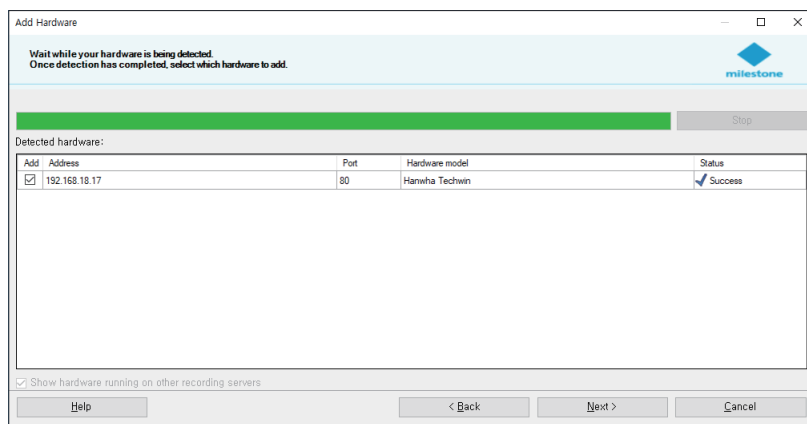
4. Check **Hanwha > Hanwha Techwin**, and click **Next**.



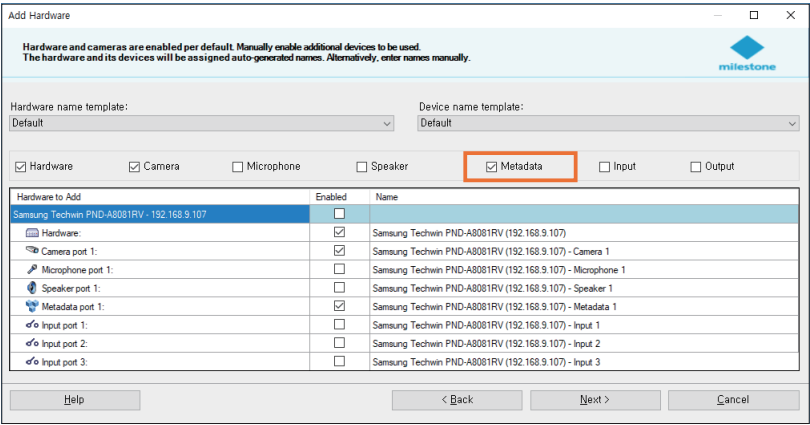
5. Enter the IP address of the AI camera.
Select **Hanwha Techwin** for **Hardware model**, and click **Next**.



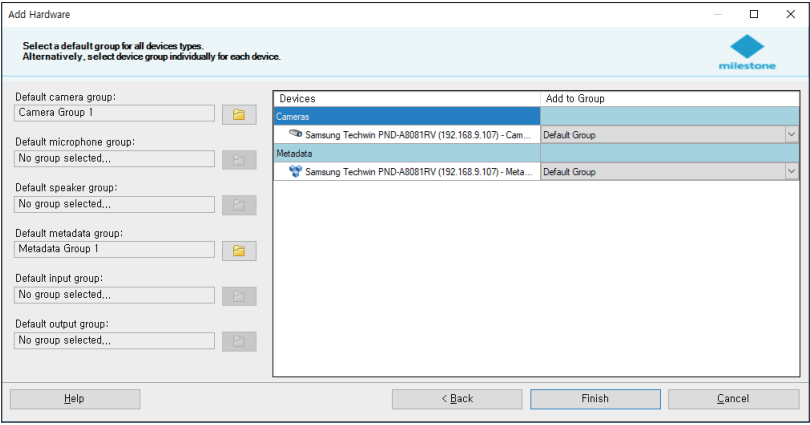
6. Check if the camera has been properly registered, and click **Next**.



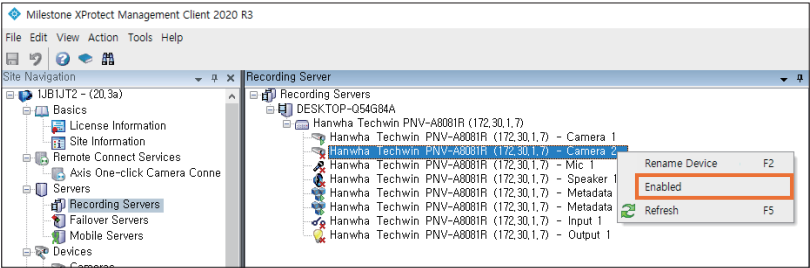
7. Make sure to check the **Metadata** box to enable it.



8. Select a group which a device or a device group will belong to. Click **Finish** to complete the camera registration.



9. If the second camera or metadata has been activated, click ☒ **Enabled** in the context menu. The check box will disappear when disabled.

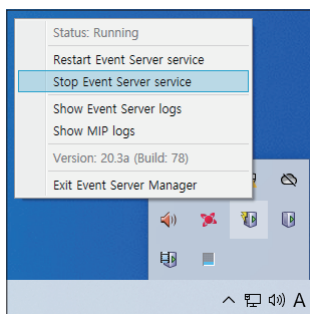


Installing AI Camera Plug-in

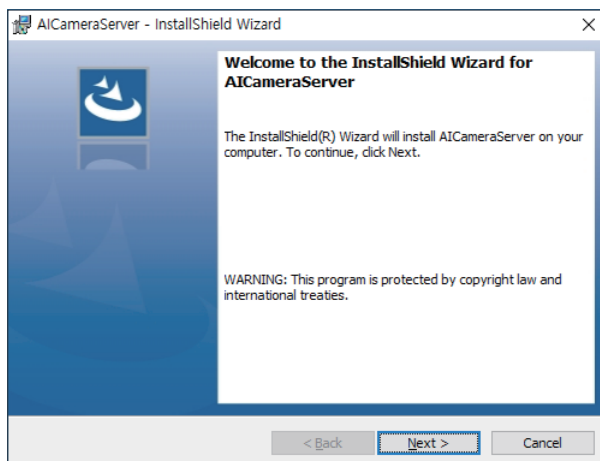
Installing Server AI Camera Plug-in

You can install the **AI Camera Plug-in** on the PC where both **XProtect Management Server** and **XProtect Event Server** are installed.

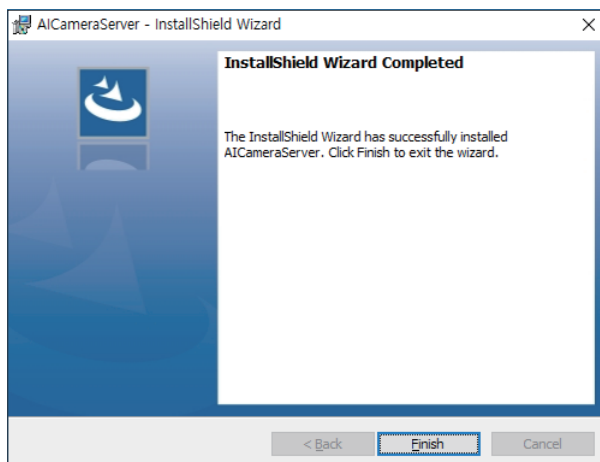
1. Stop the **XProtect Event Server** service.



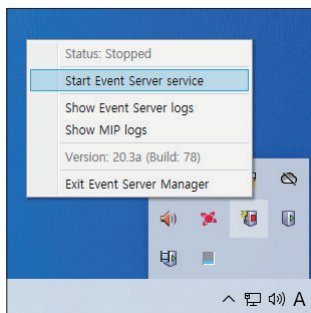
- Select **Show hidden icons > Milestone XProtect Event Server** on the task bar, and right-click to stop the service.
2. Execute the Server Plug-in installation file.
When the installation wizard appears, click **Next**.



3. When installation is complete, click **Finish** to exit.



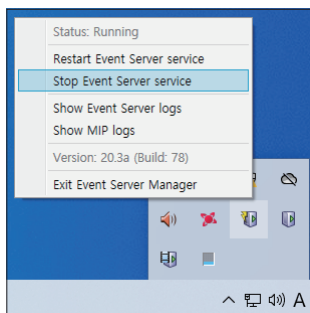
4. Restart the **XProtect Event Server** service.



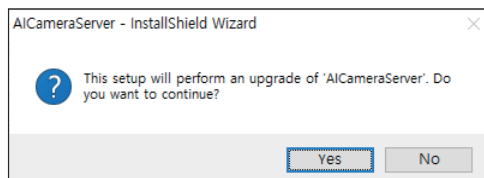
- Select **Show hidden icons** > **Milestone XProtect Event Server** on the task bar, and right-click to restart the service.

Updating Server AI Camera Plug-in

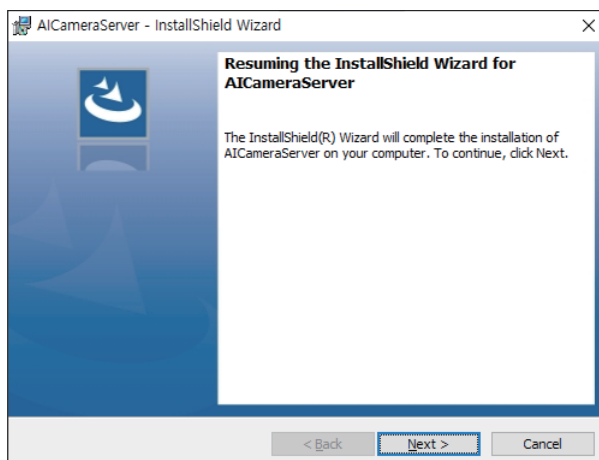
1. Stop the XProtect Event Server service.



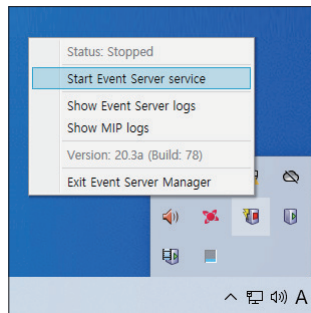
- Select  **Show hidden icons** > **Milestone XProtect Event Server** on the task bar, and right-click to stop the service.
2. Execute the Server Plug-in installation file.
When update start screen appears, click **Yes**.



3. To start updating, click **Next**.



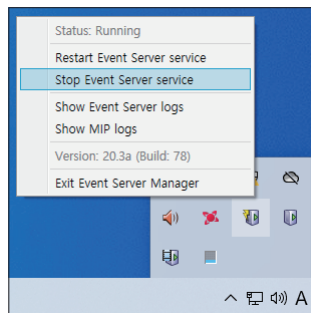
4. When update is complete, click **Finish** to exit.
5. Restart the **XProtect Event Server** service.



- Select  **Show hidden icons** > **Milestone XProtect Event Server** on the task bar, and right-click to restart the service.

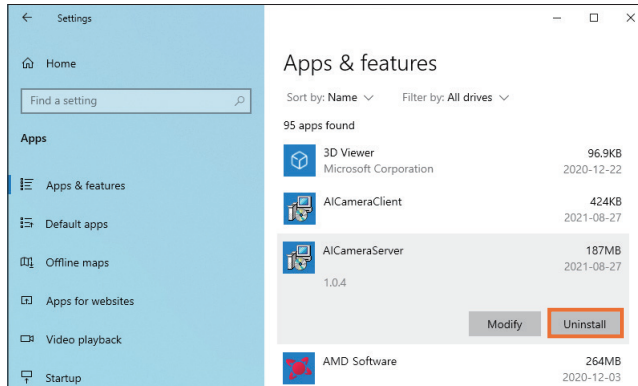
Removing Server AI Camera Plug-in

1. Stop the **XProtect Event Server** service.

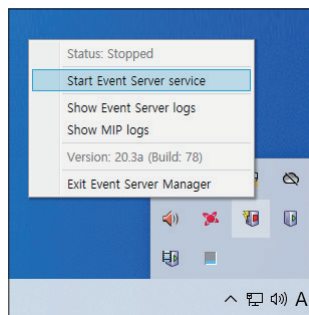


- Select  **Show hidden icons** > **Milestone XProtect Event Server** on the task bar, and right-click to stop the service.

- Click **Start > Setup > Apps > Apps & Features > AICameraServer > Uninstall**. Then, Server Plug-in will be uninstalled.



- Restart the **XProtect Event Server** service.

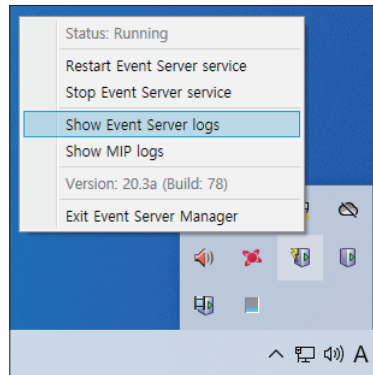


- Select **Show hidden icons > Milestone XProtect Event Server** on the task bar, and right-click to restart the service.

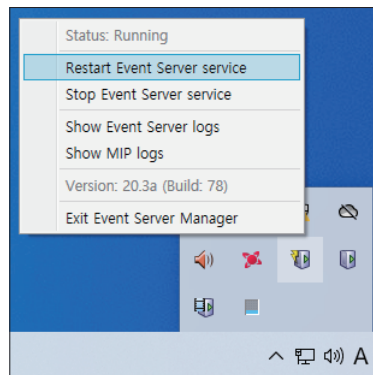
Checking Server AI Camera Plug-in Version

1. Click  **Show hidden icons** on the bottom-right corner of the PC screen.
2. Select the **Milestone XProtect Event Server** and then **Show Event Server Logs** in the context menu.

The log viewer will appear.



3. Select the **Restart Event Server service** in the context menu.

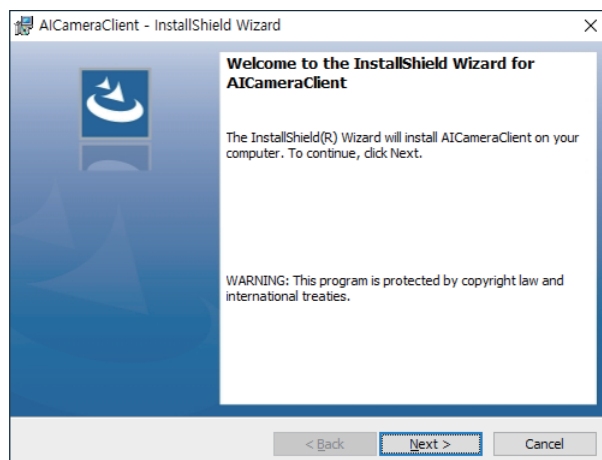


- You can check the version information from the log viewer.
Plugin loaded: AICameraServer version - Hanwha Techwin

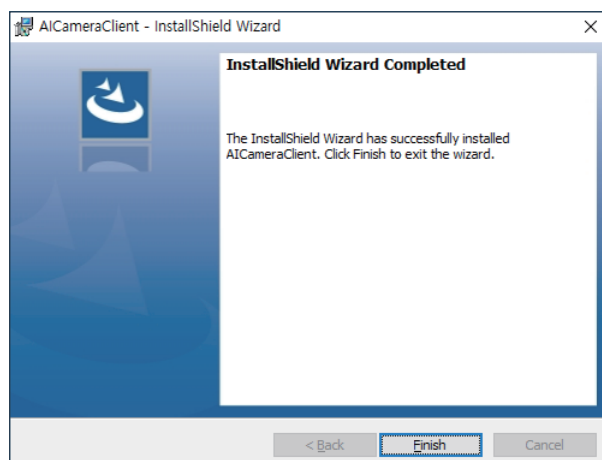
Installing Client AI Camera Plug-in

The **AI Camera Plug-in** can be installed on the PC where the **XProtect Smart Client** program is installed.

1. Close the **XProtect Smart Client** program.
2. Execute the Client Plug-in installation file.
When the installation wizard appears, click **Next**.

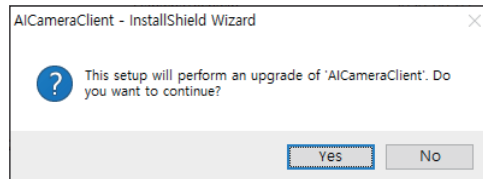


3. When installation is complete, click **Finish** to exit.

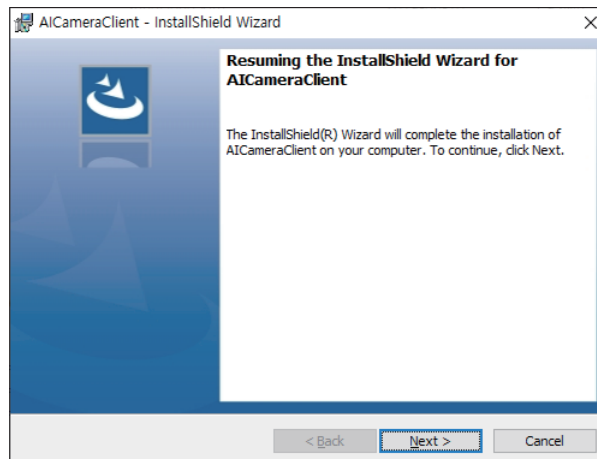


Updating Client AI Camera Plug-in

1. Close the XProtect Smart Client program.
2. Execute the Client Plug-in installation file.
When update start screen appears, click **Yes**.



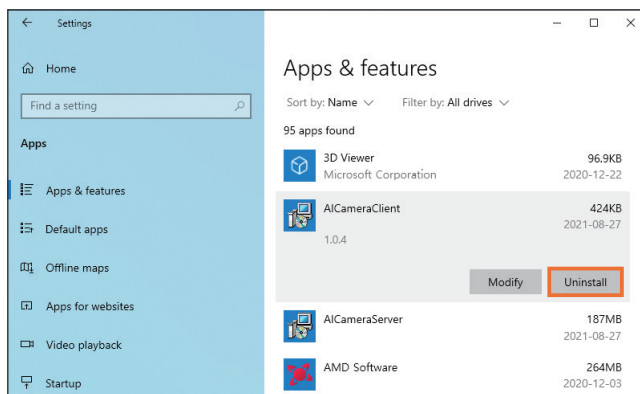
3. To start updating, click **Next**.



4. When update is complete, click **Finish** to exit.

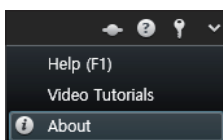
Uninstalling Client AI Camera Plug-in

1. Close the XProtect Smart Client program.
2. Click **Start** > **Setup** > **Apps** > **Apps & Features** > **AI CameraClient** > **Uninstall**.
Then, Client Plug-in will be uninstalled.



Checking Client AI Camera Plug-in Version

1. Launch the XProtect Smart Client program.
2. Click **Help** > **About** on the top-right corner of the screen.
You can check the version information.



- AISearchPerson version - Hanwha Techwin
- AISearchFace version - Hanwha Techwin
- AISearchVehicle version - Hanwha Techwin
- AISearchLicensePlate version - Hanwha Techwin

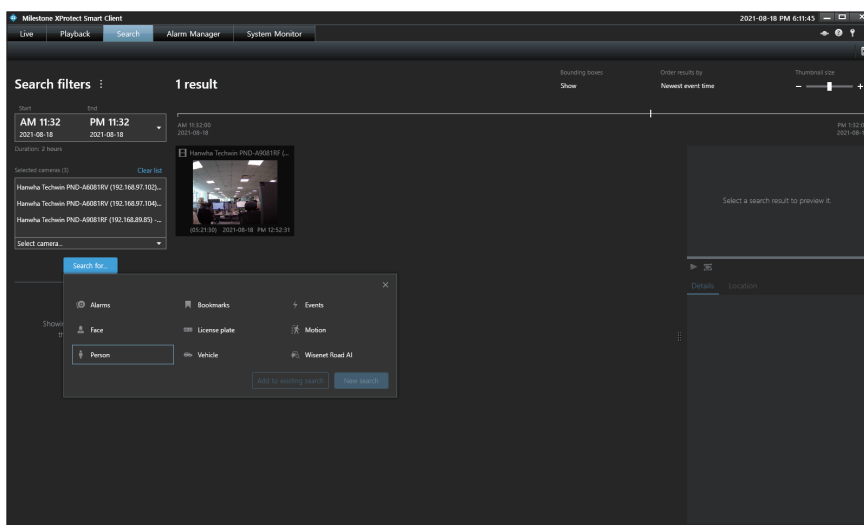
Searching for AI Analytics Events

AI analytics events save only one event per object based on the most accurate time of recognizing an object (Person/Face/Vehicle/License plate/Wisenet Road AI) that is being continuously analyzed by the AI camera.

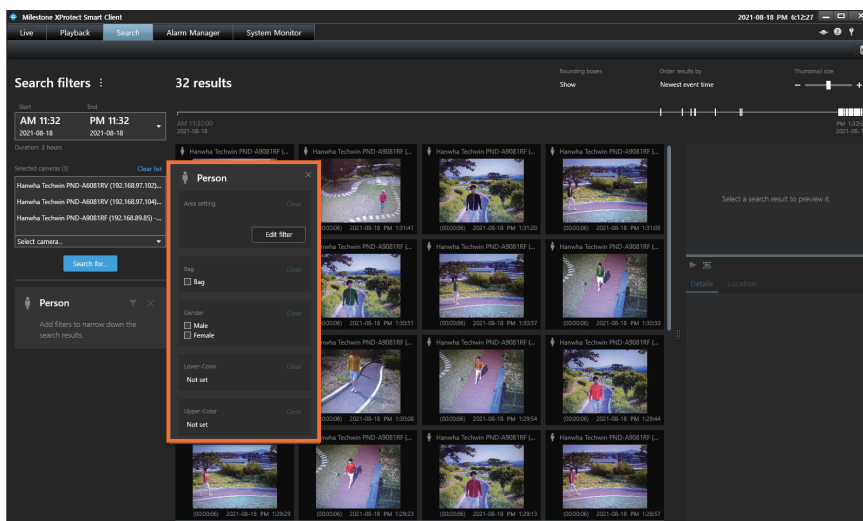
You can search for the saved events by setting the details of each object or camera area.

Searching for Persons

1. Execute the **XProtect Smart Client** program.
2. Click the **Search** tab.
3. Select a search start time, end time, and camera, and click the **Search for...** button. Additional search filters will be displayed.

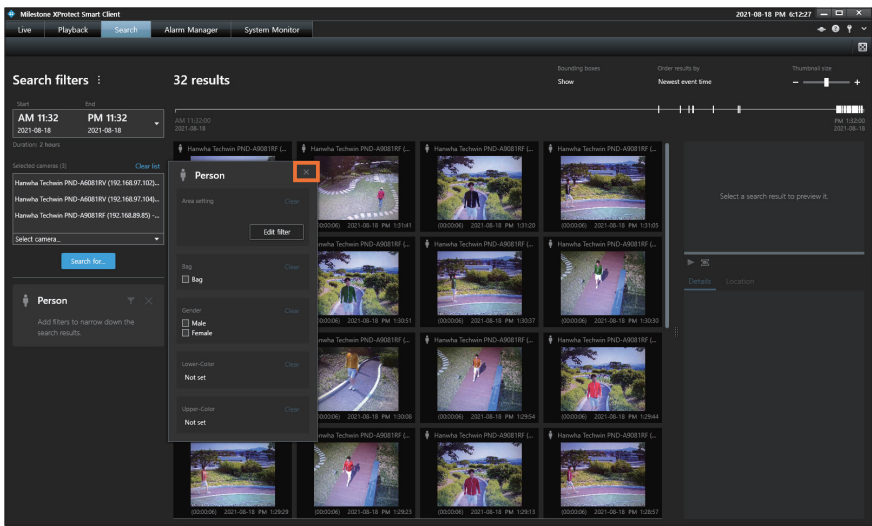


4. Select **Person** from the search criteria, and click the **New search** button.
Person will be added to the search criteria, and the filter window will appear.
Click the check box of detailed items to check the search results right away.
Click the **Clear** button to delete the selected item.
From the list, you can select an event and play its video.

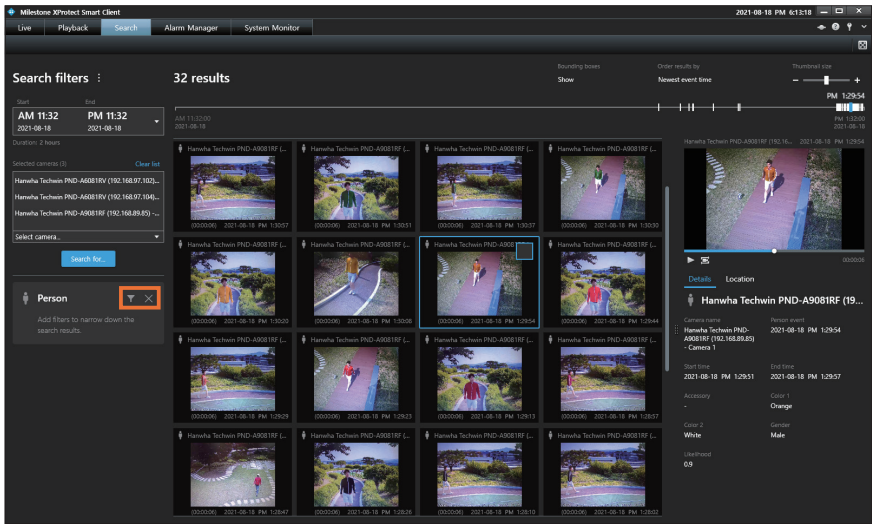


- If you select **Male** only from **Gender**, women and objects with unidentified gender are excluded from the search results.
If you select both **Male** and **Female**, objects with unidentified gender are excluded from the search results.
- If you select **Male** and **Bag**, only objects identified as male wearing a bag are included in the search results.
- For **Color**, up to two colors can be selected. Searching is valid if any one of the two colors is present.

5. Close the filter window by clicking X to complete the setup.

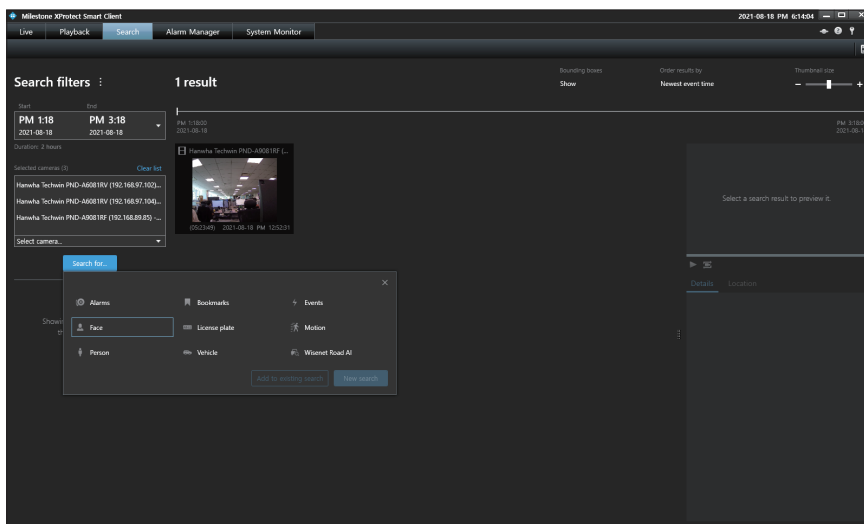


- Click  and the filter window will appear again, and the detailed items can be changed.
- Click X to remove Person from the search criteria.

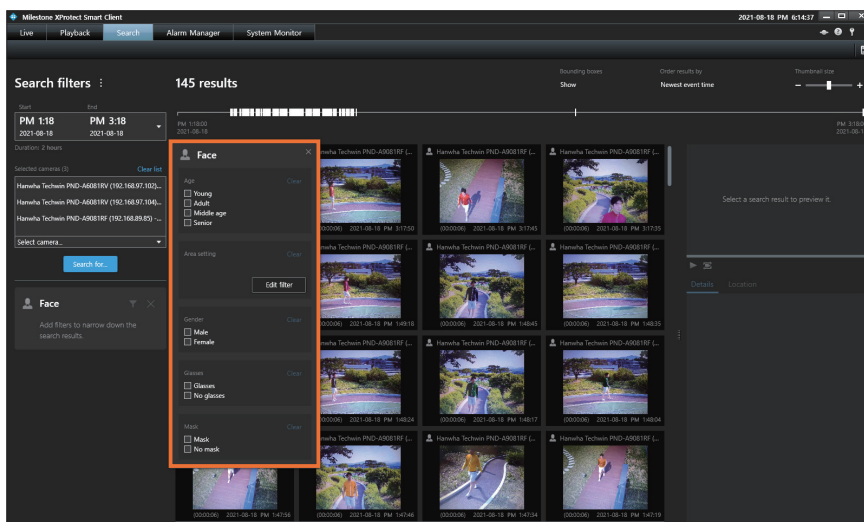


Searching for Faces

1. Launch the **XProtect Smart Client** program.
2. Click the **Search** tab.
3. Select a search start time, end time, and camera, and click the **Search for...** button. Additional search filters are displayed.

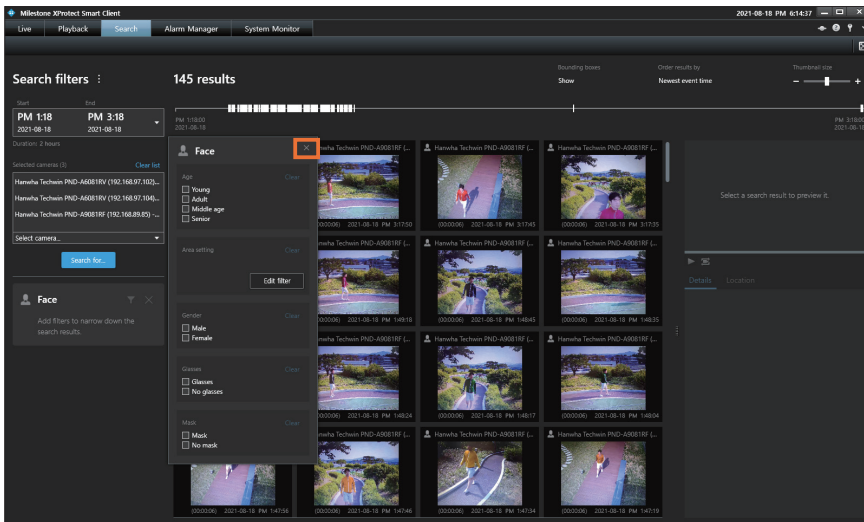


4. Select **Face** from the search criteria, and click the **New search** button. **Face** will be added to the search criteria, and the filter window will appear. Click the check box of detailed items to check the search results right away. Click the **Clear** button to delete the selected item. From the list, you can select an event and play its video.

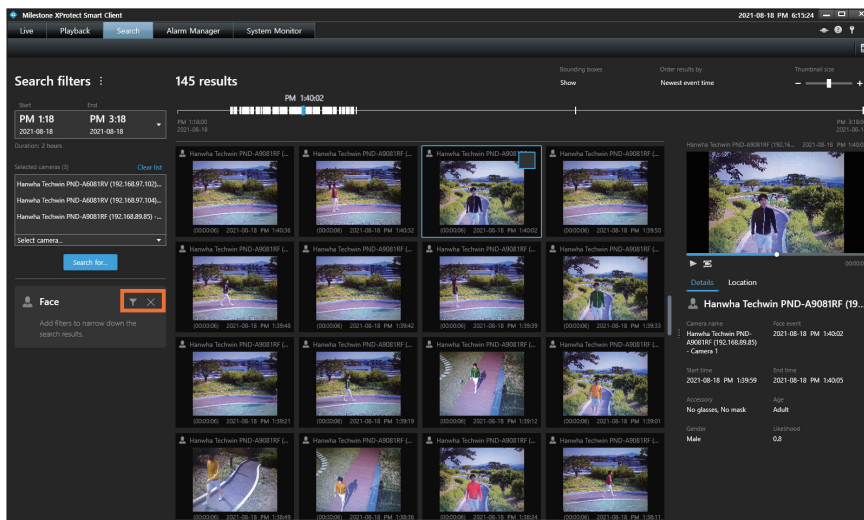


- If you select **Male** only from **Gender**, women and objects with unidentified gender are excluded from the search results.
If you select both **Male** and **Female**, objects with unidentified gender are excluded from the search results.
- If you select **Male** and **Glasses**, only objects recognized as males wearing glasses will be included in the search results. Objects not wearing glasses and objects that may not be wearing glasses will be excluded from the search results.
- If you select **Young** only from **Age**, Adult/Middle age/Senior and objects with unrecognized age are excluded from the search results.
- If you select both **Glasses** and **No glasses**, objects with indeterminate results for whether glasses are worn will be excluded from the search results.
- If you select both **Mask** and **No mask**, objects with indeterminate results for whether a mask is worn will be excluded from the search results.

5. Close the filter window by clicking X to complete the setup.

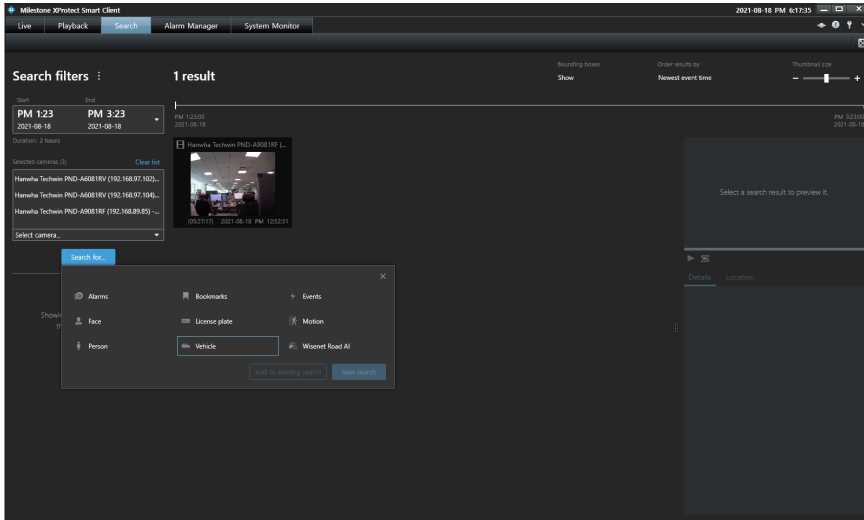


- Click  and then the filter window appears again, and the detailed items can be changed.
- Click X to remove Face from the search criteria.

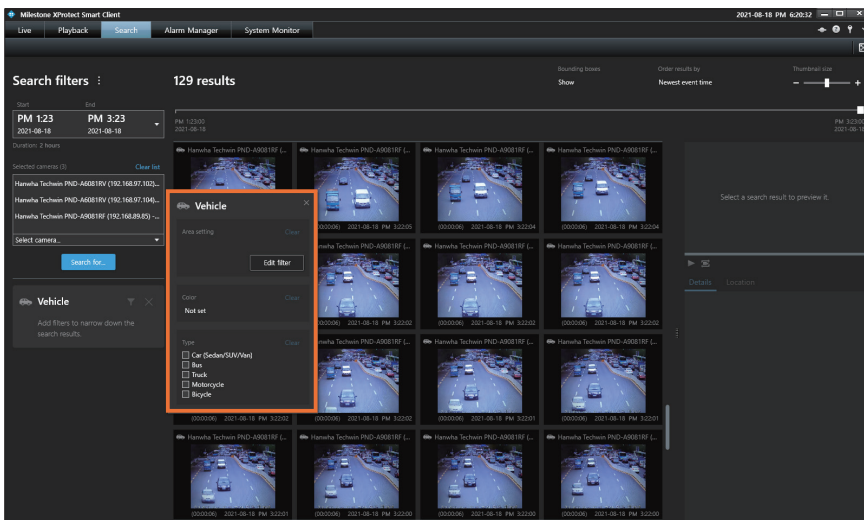


Searching for Vehicles

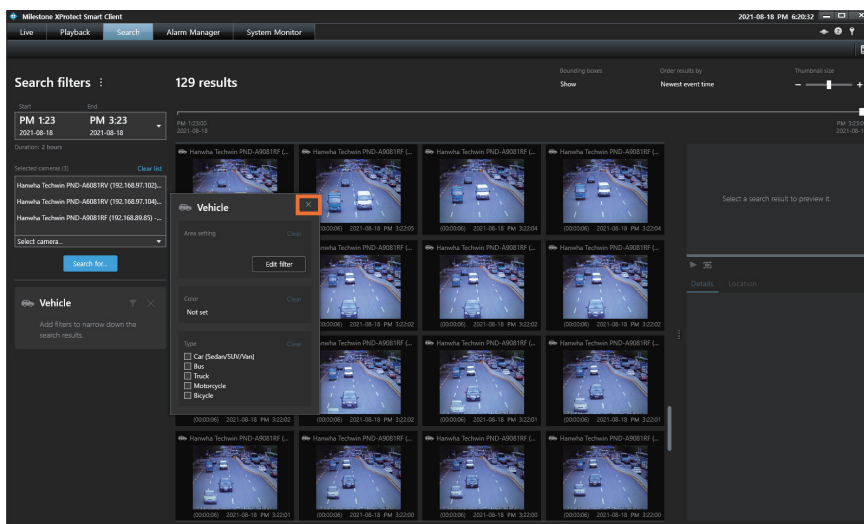
1. Execute the **XProtect Smart Client** program.
2. Click the **Search** tab.
3. Select a search start time, end time and camera, click the **Search for...** button. Additional search filters are displayed.



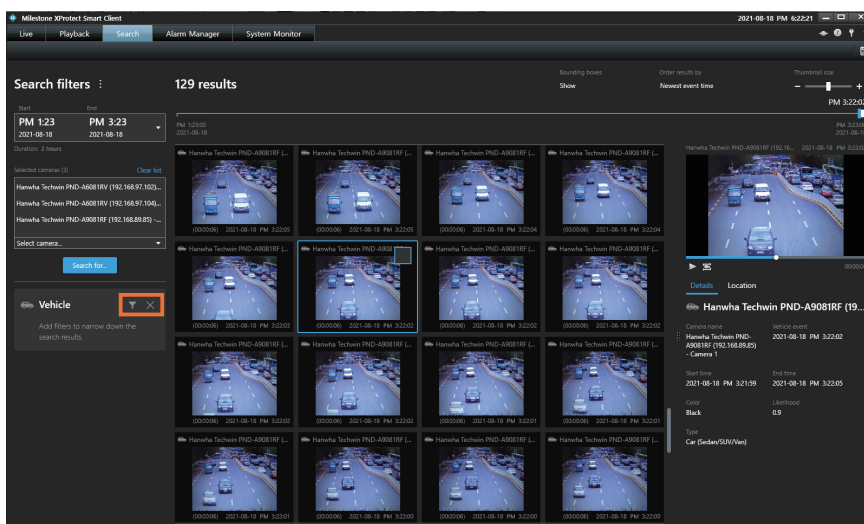
4. Select **Vehicle** from the search criteria, and click the **New search** button. **Vehicle** will be added to the search options, and the filter window will appear. Click the check box of detailed items to check the search results right away. Click the **Clear** button to delete the selected item. From the list, you can select an event and play its video.



- If you select **Bus** only from **Type**, those objects with unchecked or unidentified types are excluded from the search results.
 - For **Color**, up to two colors can be selected. Searching is valid if any one of the two colors is present.
5. Close the filter window by clicking **X** to complete the setup.

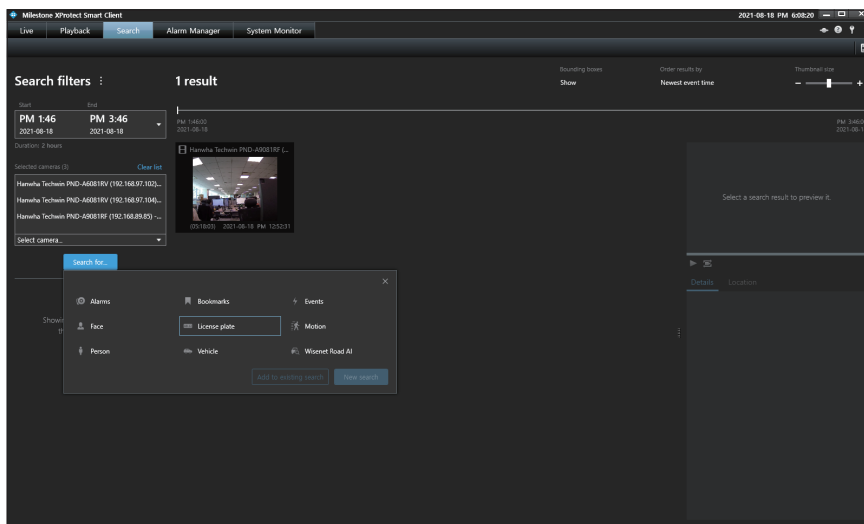


- Click  and then the filter window appears again, and the detailed items can be changed.
- Click **X** to remove **Vehicle** from the search criteria.



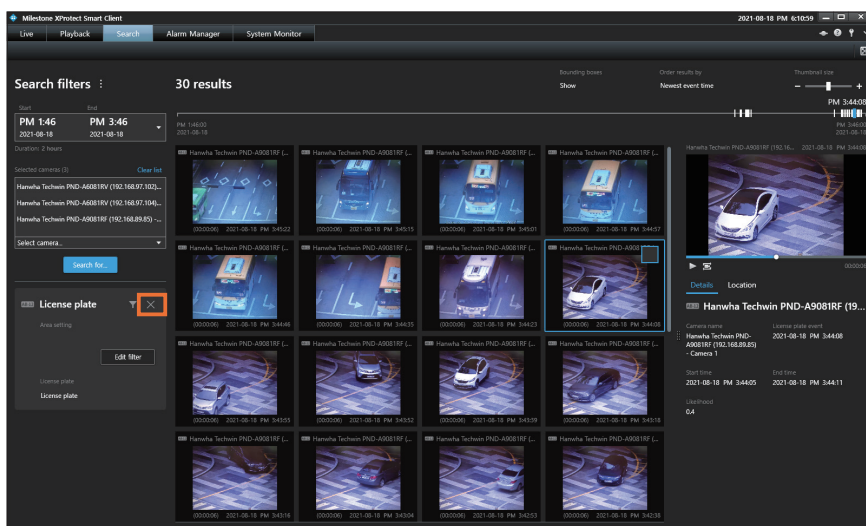
Searching for Vehicle License Plates

1. Execute the **XProtect Smart Client** program.
2. Click the **Search** tab.
3. Select a search start time, end time and camera, click the **Search for...** button. Additional search filters are displayed.



4. Select **License plate** from the search criteria, and click the **New search** button. **License plate** will be added to the search criteria, and the search results can be checked. From the list, you can select an event and play its video.
- **License plate** searches for objects recognized as vehicle license plates. If you want to search by manually entering a vehicle license number, see [Searching for Wisenet Road AI](#).

5. Click X to remove **License plate** from the search criteria.



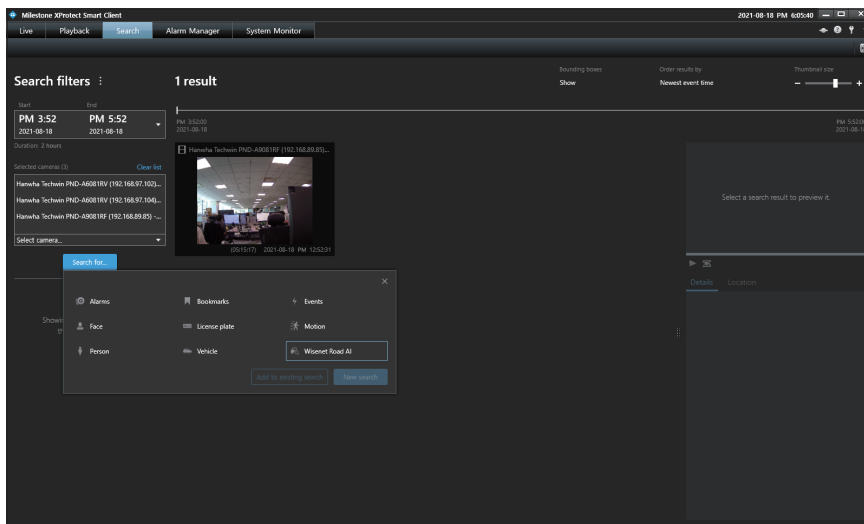
Searching for Wisenet Road AI



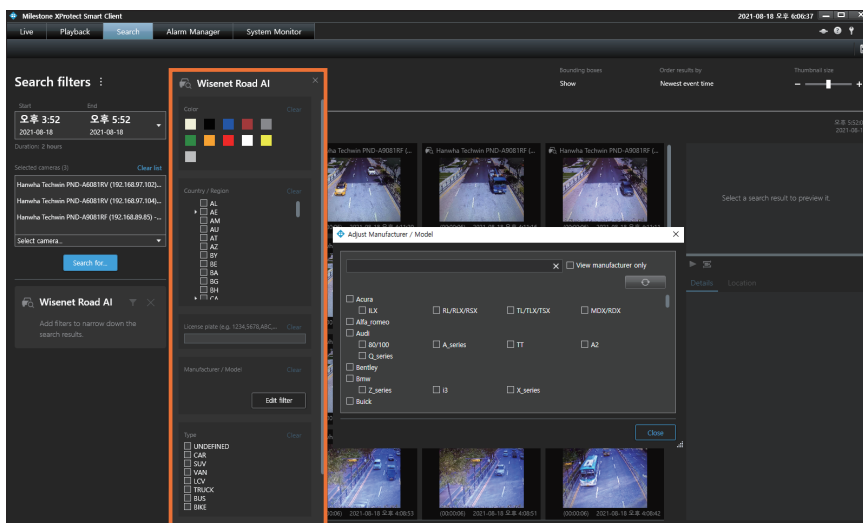
Note

Wisenet Road AI Search is only available for camera models that support the feature. For products that support the **Wisenet Road AI** search function, see [Supported Cameras](#).

1. Execute the **XProtect Smart Client** program.
2. Click the **Search** tab.
3. Select a search start time, end time and camera, click the **Search for...** button.
Additional search filters are displayed.

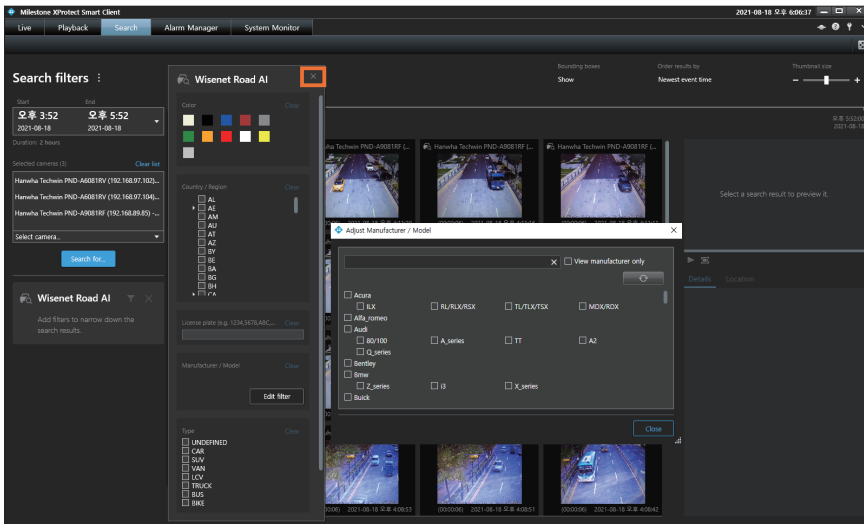


4. Select **Wisenet Road AI** from the search criteria, and click the **New search** button. **Wisenet Road AI** will be added to the search criteria, and the filter window will appear. Click the check box of detailed items to check the search results right away. Click the **Clear** button to delete the selected item. From the list, you can select an event and play its video.

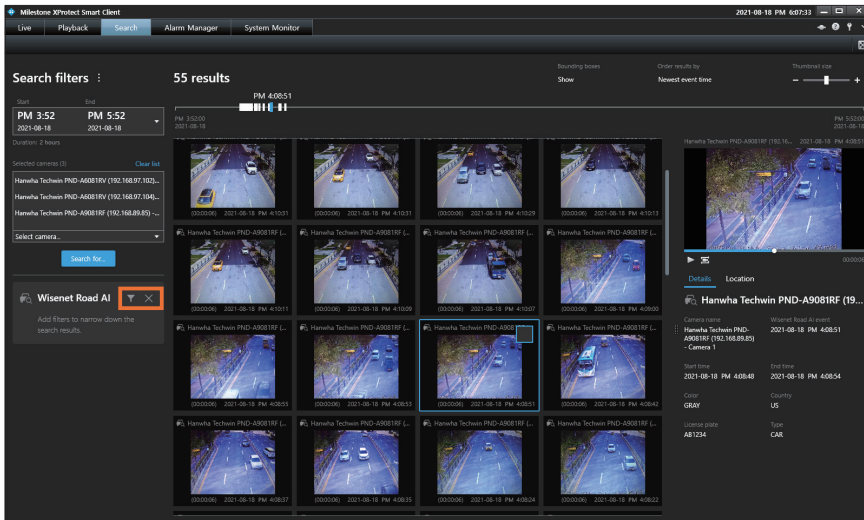


- You can select **Country/Region** and **Color** without number limits.
- For some countries, you can search by selecting specific regions.
- You can enter the license plate number of a vehicle that you want to search for in **License plate**. You can also enter multiple conditions for search, separated by commas. (e.g. 3690, ABC1234, 1ABC234)
- You can select the manufacturer or model name of the vehicle that you want to search by clicking the **Edit filter** button in the **Manufacturer/Model**. Click the  button to reset your selection.
- In the search results, the following vehicle information can be found:
 - Country/Region, License plate, Manufacturer/Model, Type, Color

5. Close the filter window by clicking X to complete the setup.

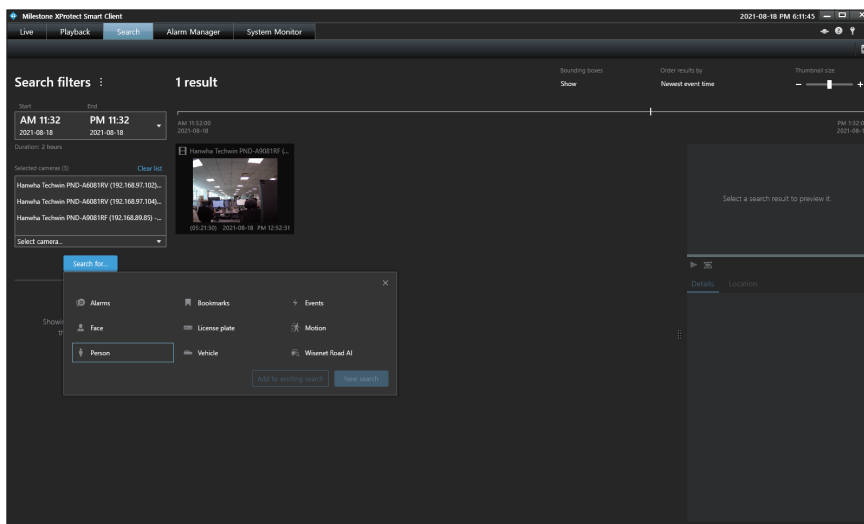


- Click **X** and then the filter window appears again, and the detailed items can be changed.
- Click **X** to remove Wisenet Road AI from the search criteria.

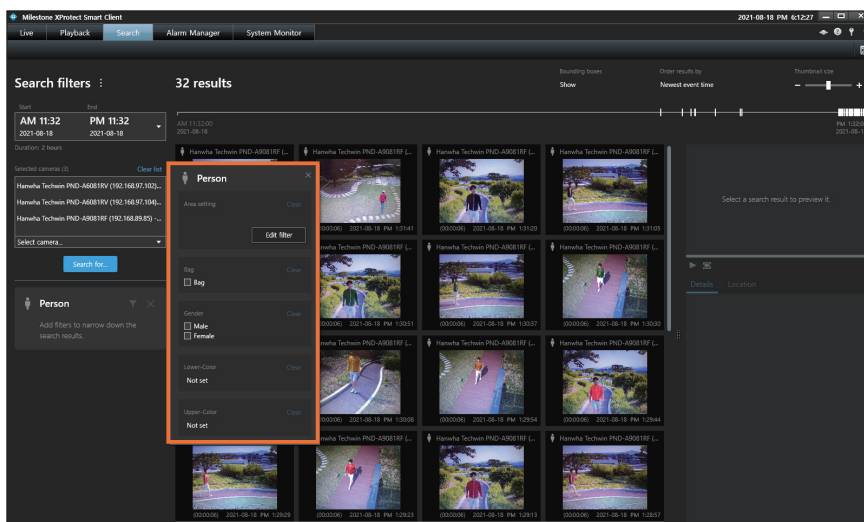


Setting Up Event Area

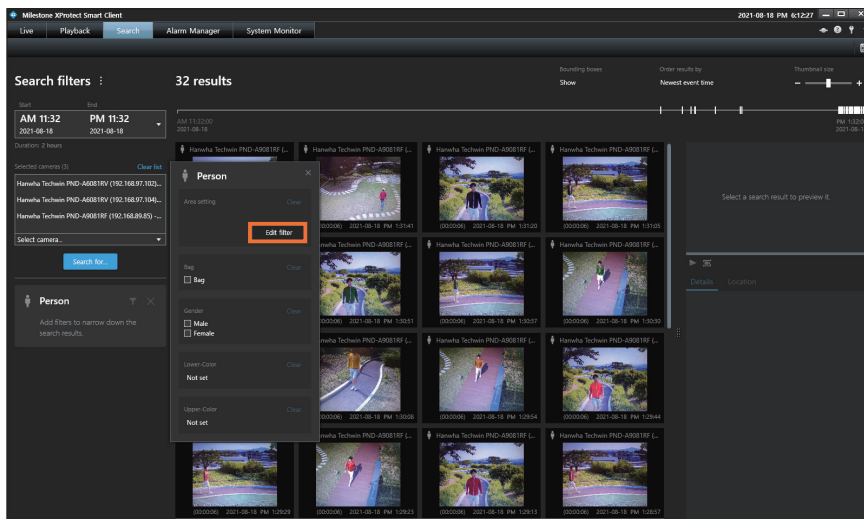
1. Execute the **XProtect Smart Client** program.
2. Click the **Search** tab.
3. Select a search start time, end time and camera, click the **Search for...** button.
Additional search filters are displayed.



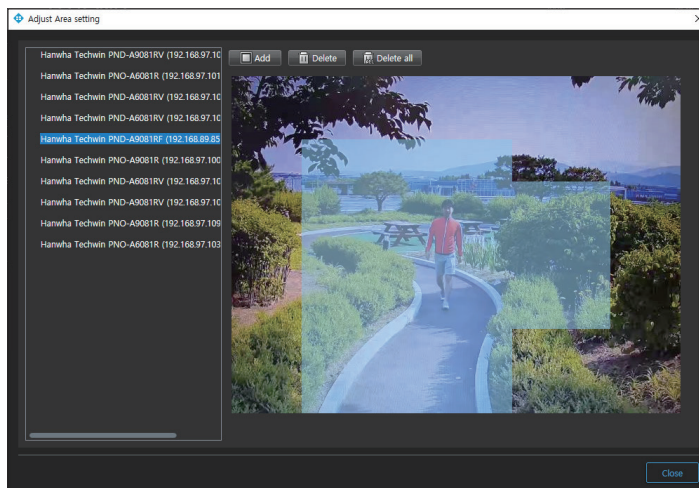
4. Select a search item you want, and click the **New search** button.
The selected item will be added to the search criteria, and the filter window will appear.
 - **Person, face, vehicle, and license plate** can be searched by setting the area. **Wisenet Road AI** does not support area settings.



- After setting the details, click the **Edit filter** button. Then, the **Adjust Area** setting window will appear.



- Select the camera for area setting, and set the area you want.



- Add:** You can drag the mouse to set the area you want.
- Delete:** You can drag the mouse to delete a previously set area.
- Delete all:** You can delete all areas previously set for the selected camera.



Note

Up to 4 camera areas can be set at the same time.

- To finish the setup, click **Close**.

