

Operating Instructions

Extension Software

(AI-VMD/AI People Counting for 360-degree fisheye)



Before attempting to connect or operate this software,
please read these instructions carefully and save this manual for future use.

The model number is abbreviated in some descriptions in this manual.

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Introduction

Preface

The Extension Software AI-VMD/AI People Counting for 360-degree fisheye (hereafter referred to as this product) is software for more conveniently using the AI 360-degree network camera (option, hereafter referred to as the camera). By installing this product on the camera and registering a Registration key, you will be able to select and use the following functions.

- Count with the "Cross Line Counting function" that counts the number of people that cross a line.
- Count with the "Area Counting function" that counts the number of people in an area.
- Activate an alarm with the "Occupancy Detection function (hereinafter referred to as "Occupancy Detection")" which detects person crowding.
- Count with the "Heat Map function (hereinafter referred to as "Heat Map")" that visualizes passage and loitering.
- Activate an alarm with the "AI-VMD function (AI-VMD)" that automatically identifies moving bodies detected.

Use the i-PRO Configuration Tool (hereinafter referred to as "iCT")¹ to configure this product.

*1 Refer to the URL below for more information about iCT.

<https://i-pro.com/global/en/surveillance/tools/ict>

Important

- This product is necessary for each camera.
 - See the URL below for information such as the models supported by this product, the software version, etc.
<https://i-pro.com/global/en/surveillance/training-support/support/technical-information>
<Control No.: C0103>
- * For more information about the control number, refer to "About the Operating Instructions" on page 4.

Features

■ Cross Line Counting

It can count the number of people who cross a line and provide statistical information about the number of people counted.

■ Area Counting

It can count the number of people detected in an area and provide statistical information about the number of people counted.

■ Occupancy Detection

It can count the number of people detected in an area and activate an alarm.

■ Heat Map

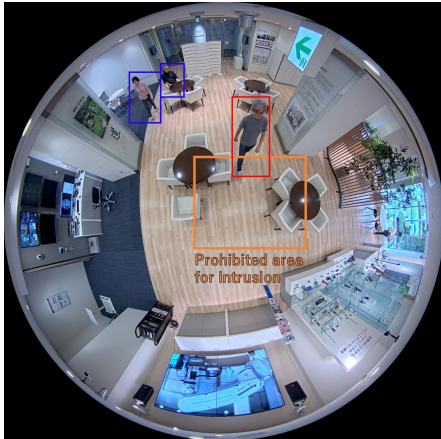
It can count the number of people passing through or loitering within the camera's range of view and provide statistical map information based on the number of people counted.

■ AI-VMD

- It uses AI technology to identify whether a detected moving body is a vehicle (4-wheeled) or a person.
 - It can use the following 3 modes to detect moving bodies and activate an alarm.
 - Intruder: When a moving body enters a pre-set area.
 - Loitering: When a moving body remains still in a pre-set area for a specific period of time.
 - Cross Line: When a moving body crosses a pre-set line in a specified direction.
- Here are examples of each type of detection.

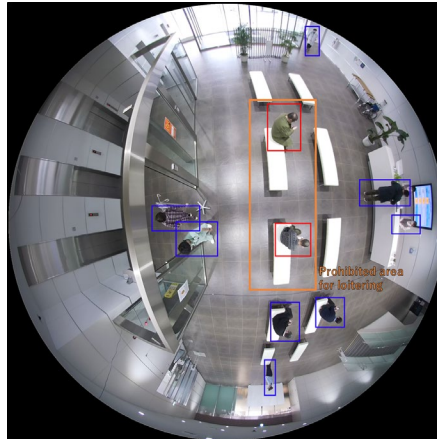
Introduction (continued)

Intruder



It detects when a moving body enters a specific area and activates an alarm.

Loitering



It detects when a moving body remains still in a specific area and activates an alarm.

Cross Line



It detects when a moving body crosses a set line in a specified direction and activates an alarm.

About the Operating Instructions

This manual explains how to register this product on the camera, the settings that must be configured before the product can be used and how to use the product. It is presumed that this product will be used by being registered on a camera, so be sure to read the operating instructions for the camera in use as well when using this product.

Depending on the model of camera used, the camera screens shown in this manual may differ from your own. The setting screen described in this manual may differ from the actual screen depending on the iCT version.

In this manual, a personal computer is referred to as a PC.

"<Control No.: C****>" used in these documents should be used to search for information on our support website (<https://i-pro.com/global/en/surveillance/training-support/support/technical-information>) and will guide you to the right information.

System requirements for a PC

For the requirements of PC which are used for settings refers to the Operating Instructions of a camera.

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- Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation.
- Google Chrome are trademarks of Google LLC.
- Mozilla, and Firefox are trademarks of the Mozilla Foundation in the US and other countries.
- ONVIF is the trademark of ONVIF Inc.

Introduction (continued)

On open source software used

- This product uses the open source software below.
- For the corresponding license statement, see "Open Source Software".

Name of software	Name of license
OpenCV	License Agreement For Open Source Computer Vision Library (3-clause BSD License)
libjpeg-turbo	<ul style="list-style-type: none">• The IJG (Independent JPEG Group) License• The Modified (3-clause) BSD License• The zlib License
cwebsocket	The MIT License

Copyright

Distributing, copying, disassembling, reverse compiling and reverse engineering of the software provided with this product are all expressly prohibited. In addition, exporting any software provided with this product violating export laws is prohibited.

Disclaimer of warranty

IN NO EVENT SHALL i-PRO Co., Ltd. BE LIABLE TO ANY PARTY OR ANY PERSON, EXCEPT FOR REPLACEMENT OR REASONABLE MAINTENANCE OF THE PRODUCT, FOR THE CASES INCLUDING BUT NOT LIMITED TO BELOW:

- (1) ANY LOSS OR DAMAGE, INCLUDING WITHOUT LIMITATION, DIRECT OR INDIRECT, SPECIAL, CONSEQUENTIAL OR EXEMPLARY, ARISING OUT OF OR RELATING TO THE PRODUCT;
- (2) INCONVENIENCE OR ANY LOSS ARISING WHEN IMAGES ARE NOT DISPLAYED, DUE TO ANY REASON OR CAUSE INCLUDING ANY FAILURE OR PROBLEM OF THE PRODUCT;
- (3) ANY PROBLEM, CONSEQUENTIAL INCONVENIENCE, OR LOSS OR DAMAGE, ARISING OUT OF THE SYSTEM COMBINED WITH THIRD PARTY DEVICES;
- (4) ANY CLAIM OR ACTION FOR DAMAGES BROUGHT BY ANY PERSON OR ORGANIZATION AS A PHOTOGRAPHED SUBJECT DUE TO VIOLATION OF PRIVACY CONCERNING A SURVEILLANCE CAMERA'S PICTURE OR SAVED DATA, FOR SOME REASON (INCLUDING USE WHEN USER AUTHENTICATION ON THE AUTHENTICATION SETTING SCREEN IS SET TO OFF), BECOMING PUBLIC OR BEING USED FOR ANY PURPOSE;
- (5) LOSS OF REGISTERED DATA CAUSED BY ANY FAILURE (INCLUDING INITIALIZATION OF THE PRODUCT DUE TO FORGOTTEN AUTHENTICATION INFORMATION SUCH AS A USER NAME AND PASSWORD).

Before using this product

General Information

The camera on which this product (extension software) is installed should be attached to a ceiling so that it is level with the ground. Furthermore, to increase the accuracy of detection of the subjects filmed, we recommend that cameras fixed to the ceiling be installed at a height of 2.5m - 5.0m.

The following situations may make subject detection difficult, may cause a false report or mistaken activation of an alarm or may reduce accuracy when counting people.

- There is little difference in luminance (difference in brightness) between the background and the subject of filming.
- Filming brightness is low, such as at night.
- The subject is out of focus.
- The subject is shaking.
- The subject is moving too quickly or too slowly.
- The subject is too small or too large.
- The subject is overexposed or blacked out.
- The subject is heading towards or away from the camera from the periphery of the fisheye image.
- Only part of the target person is visible because they are hidden by a privacy zone or another filming subject. (Estimate: 2/3rds or less of the body above the shoulders is shown)
- The person is lying down or collapsed.
- The person is short. (Estimate: 120cm tall or less)
- The person is holding a large piece of baggage. (E.g. pushing a luggage carrier, stroller or wheelchair)
- The person is not walking independently. (E.g., a baby being carried)
- There are too many filming subjects. (Estimate: 50 or more people)
- Multiple subjects are intersecting.
- The lighting situation changes easily such as outdoors or near a window.
- There is an external light such as sunlight or car headlights or light reflecting from a surface such as glass or a water puddle.
- A strong external light has placed the subject or other areas in shadow.
- The illumination varies, for example due to a light turning on and off.
- The weather is extremely bad.
- An animal or an insect is being shown.
- A poster of a human being or a vehicle or a mannequin is being shown.
- The camera lens is dirty or covered by water droplets.
- The camera is shaking.

Other cautions are explained below.

- Please set the height of the camera to an accurate value. Setting it to an accurate value will increase the performance of measurement and alarm activation.
- If objects that cause false detections such as mannequins, posters of persons or vehicles, moving trees, a road where vehicles frequently pass, or a water surface are present within the image, false detections can be reduced by setting a mask area (☞ page 38).
- If there are many subjects in the image, the performance of the measurement and alarm activation features can be improved by setting a mask area (☞ page 38) that covers the area outside the area set or areas outside the immediate region of the line.
- When configuring the setting, after configuring the area setting (☞ page 8) and line setting (☞ page 22) that match the state of the camera's installation and the expected movements of the subjects, be sure to check the product's operation. Check the operation both in the daytime and the nighttime, especially in cases where there are large differences in the installation environment due, for example, to illumination differences during the day and at night.

Before using this product (continued)

- The performance of the measurement and alarm activation features may be lowered for about one minute after the power is turned on, after the camera's setting are changed or after the camera's angle of view is changed.
- As long as there is a detection target within the image, the alarm will activate repeatedly at set intervals. Therefore, the email and individual alarm notifications will also be sent out at set intervals (refer to the [Alarm deactivation time] section under the [Alarm] tab on the camera setting screen).
- When the burden on the camera's processing power is high, such as when the following setting are enabled, it may make subject detection difficult, cause a false report or mistaken activation of an alarm or reduce the accuracy of the counting of persons.
 - When the "Image capture Mode" is "Fisheye+Double Panorama" or "Fisheye+Quad PTZ."
 - When multiple camera functions are running at the same time, for example during data encryption or when recording to the SD memory card.
- Depending on the camera you are using, the transmission framerate may be limited when using the AI-VMD/AI People Counting application. Refer to the URL below for details.
<https://i-pro.com/global/en/surveillance/training-support/support/technical-information>
<Control No.: C0103>
- When using "Fisheye + Double Panorama" or "Fisheye + Quad PTZ" in the "Image capture Mode", set the resolution of JPEG (1) or stream (1) to "Fisheye/1280×1280".
- The supported Image capture Modes of this product are as follows. Set the camera Image capture Mode to one of the following.
 - Fisheye
 - Fisheye + Double Panorama
 - Fisheye + Quad PTZ
 - Fisheye + CorridorThe company shall not be liable for any inconvenience, damage or loss caused by the various setting of this product or the results thereof.
- This product's functions are not intended to prevent theft or fire. The company assumes no responsibility whatsoever for any accidents or damages that may occur.

Supplementary Information for Cross Line Counting

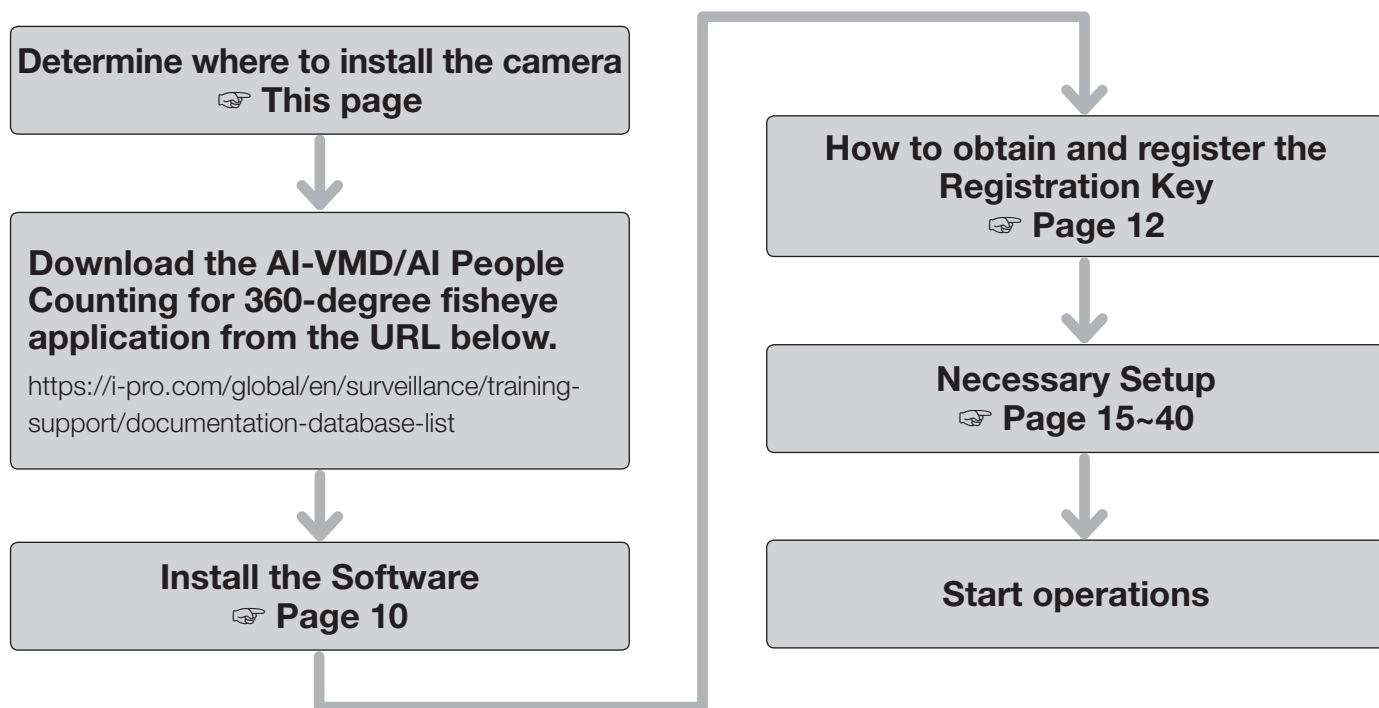
Use this function indoors at an entrance or exit with stable illumination. We also recommend using a 5M camera.

In the following situations, the accuracy of counting of persons may be reduced.

- The camera is either too close or too far from a measuring point such as the entrance or exit door. (Recommended distance: 1.0m or more)
- There are too many people passing through the measuring point. (Estimate: over 5000 people (2500 entering, 2500 leaving) pass in an hour)
- There is loitering near the measuring point. (E.g., there is an information counter or a store display case near the measuring point which makes visitors stand still)
- Persons who are not measurement targets pass near the measuring point. (E.g., there are people crossing around the periphery of the measuring line (without entering or leaving the store) when you want to count the number of people entering/leaving a store with a camera installed at the entrance/exit)
- The measurement targets do not cross the line set. (E.g., they enter the store by turning left immediately before crossing the line set at the entrance/exit of the store)

Activation

Operation flow



Determine where to install the camera

First determine where the camera will be installed.

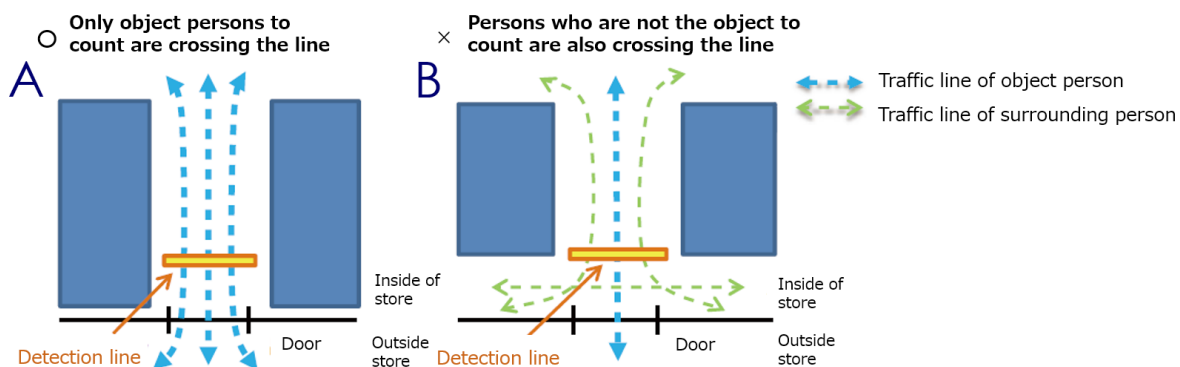
Decide on a location for installation according to the conditions listed below. Check the "Before using this product" section as well.

- Camera installation location

When considering where to install the camera, observe the line of flow of the targets for counting and people passing nearby in advance. In an operational scenario like Figure B, the number of persons who are not entering or exiting will increase, so we recommend installing the camera as close to the entrance of a facility as possible.

- Camera height setting

Height from the ground: 2.0m - 5.0m



Activation (continued)

- Camera installation location

Distance from entrance: 1.0m or more

- Camera installation direction

Install it so the entrance appears in one of the four directions in the image (up, down, left or right)

- Count Line setting position

Distance from the camera: Within the recommended area

*1 *2

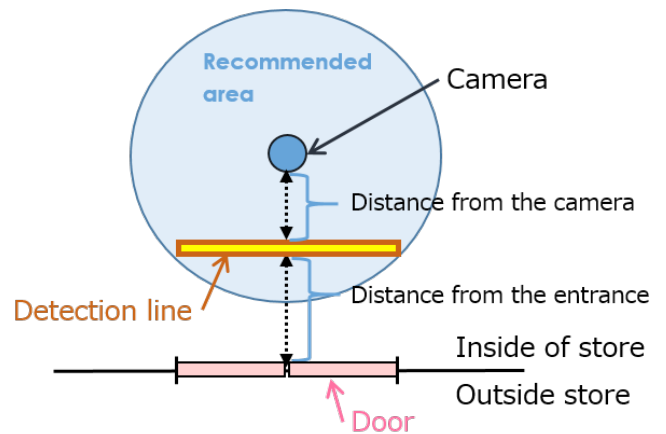
Distance from entrance: 1.0m or more

- Count line width

A length within the recommended area *1

*1 This depends on the camera height setting. Refer to page 23 for more details.

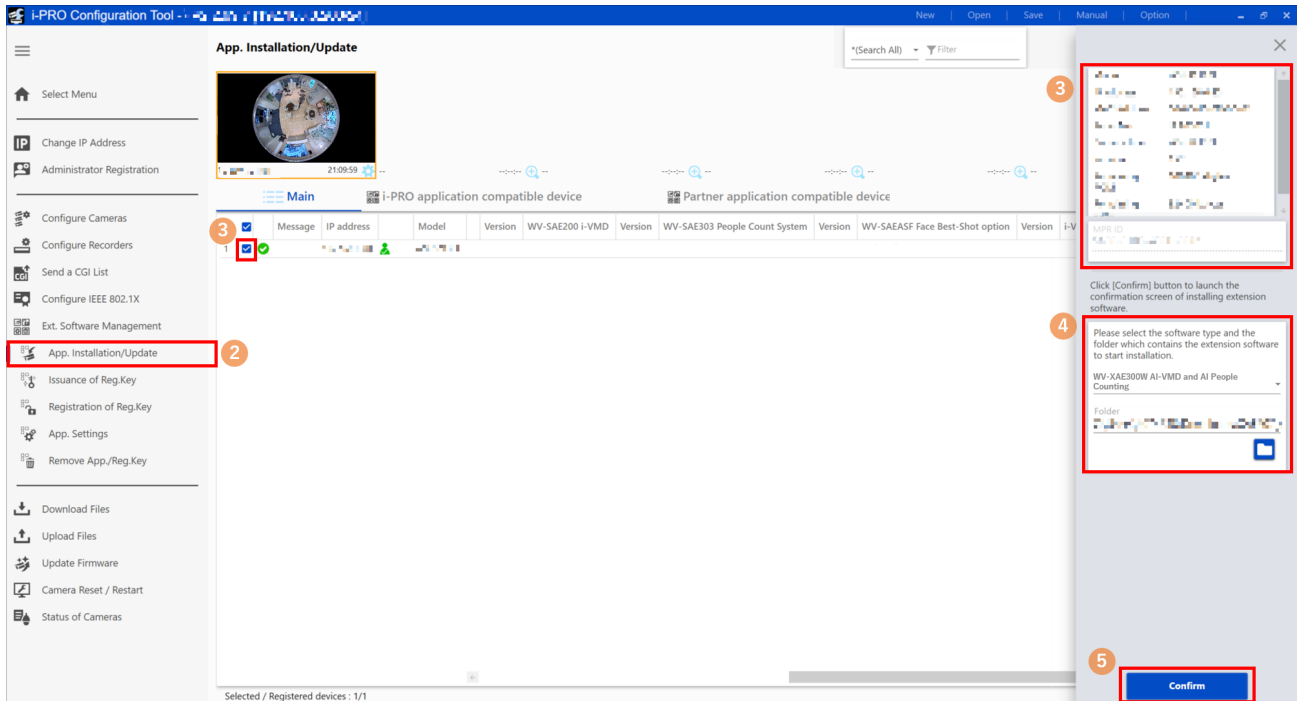
*2 Counting accuracy improves the closer it gets to the center of the camera image (directly under the camera).



Activation (continued)

Install the Software

Follow the steps below to download this product and install it on your camera.



- (1) Access the URL below, download "AI-VMD/AI People Counting for 360-degree fisheye" and save it on your PC.
<https://i-pro.com/global/en/surveillance/training-support/documentation-database-list>

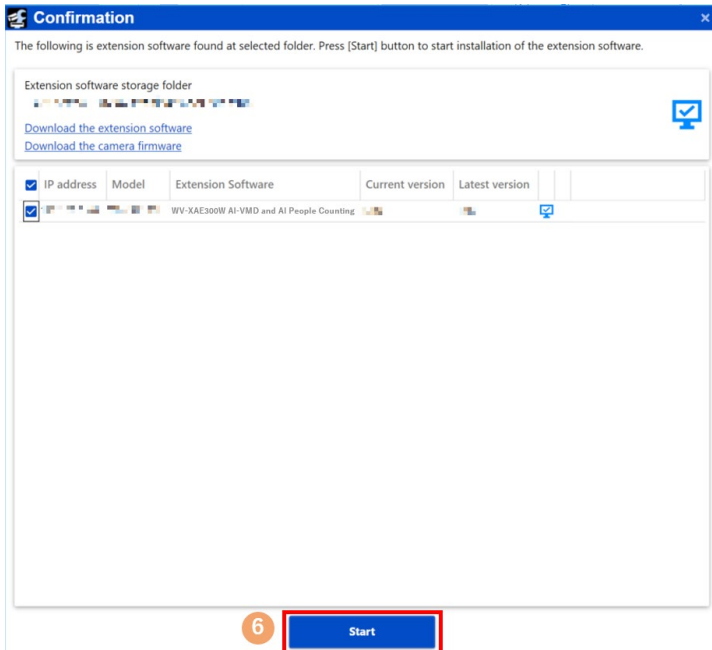
Important:

- A space cannot be used in the name of the saving directory.

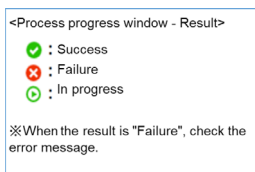
- (2) Select the "App. Installation/Update" iCT sub-menu.
- (3) Select the camera to install the application on and confirm that information such as the model number as well as the MPR ID is displayed.
- (4) Input the following items on the setting screen.
- Extension software: Select "AI-VMD/AI People Counting for 360-degree fisheye"
 - Folder: Specify the save location for the extension software obtained in step (1).

Activation (continued)

(5) Click the [Confirm] button.



(6) On the Confirmation screen, confirm that the target camera is checked, check the version of the app registered/ updated and click the [Start] button.



(7) When the <Process progress window - Result> screen appears, confirm that the installation has been successfully completed.

Important:

- Do not turn off the power of the camera when installing the software.
- Do not perform any operations until the installation is completed.
- If the installation fails, check the details of the error in the message field.

Activation (continued)

How to obtain and register the Registration Key

This product DOES NOT need to be activated by "Registration Key" issued by Key Management System before you start using.

Follow the steps below to obtain the Registration Key.

<If you do not have your User ID and password for the Key Management System>

* Access the website of the Key Management System and create your User ID and password.

Then start reading from **STEP 1** below.

<If you already have your User ID and password for the Key Management System>

* Access the website of the Key Management System and "Issue Registration Key" with the User ID and password that you have obtained.

Then start reading from **STEP 2** below.

Note:

- This product has a trial period, during which you can use this product without registering the Registration Key. If you keep using it after the trial period (30 days), obtain and register the Registration Key.

STEP1 Sign up

(1) Access the URL below.

<https://kms.business.panasonic.net/ipkms/pc/home.htm>

(2) Login as a temporary user using the User ID and password written on the web page.

(3) Register required information and create your User ID and password.

Important:

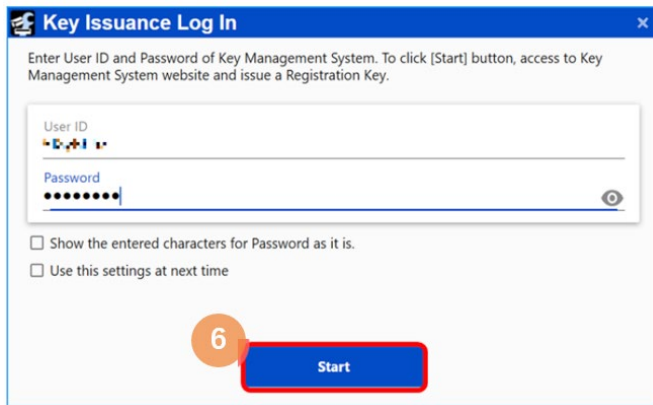
- Keep your User ID and password safe. You do not need to obtain a new User ID from the next time. Use the User ID already issued.
- It is recommended to change the password periodically. To change the password, log into PC-specific URL and use "Change Password."

STEP 2 Issue the Registration key

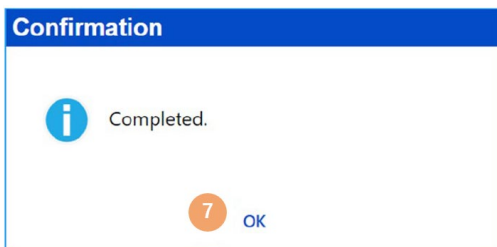
The screenshot displays the I-PRO Configuration Tool interface. On the left, a sidebar menu lists various configuration options, with 'Issuance of Reg.Key' highlighted by a red box and labeled '1'. The main area shows a table of devices with columns for Message, IP address, Model, Reg.Key State, Reg.Key No., Activation Key No., and Registration ID. A red box and '2' highlight the 'Message' button in the table. Another red box and '3' highlight the 'Issue' button in the table. On the right, a panel titled 'Enter Activation Key No and Registration ID of extension software function.' contains fields for 'Activation Key No.' and 'Registration ID', with a red box and '4' highlighting the 'Enter' button. At the bottom right, a blue 'Next' button is highlighted with a red box and labeled '5'.

Activation (continued)

- (1) Select the "Issuance of Reg.Key" sub-menu.
- (2) Place a check in the checkbox for the camera for which the Registration key will be issued. (Multiple checks are allowed)
- (3) Select the target camera and confirm that the model number and other information as well as the MPR ID is displayed.
- (4) Input the following on the setting screen.
 - Extension software: Select "AI-VMD/AI People Counting for 360-degree fisheye"
 - Activation Key No.: Input the Activation Key No. printed on the Activation Key Card you purchased (16 digits)
 - Registration ID: Input the Registration ID printed on the Activation Key Card you purchased (8 digits)
- (5) Click the [Next] button.



- (6) When the "Key Issuance Log In" screen is displayed, input the user name and password registered for the Key Management System and then click the [Start] button.



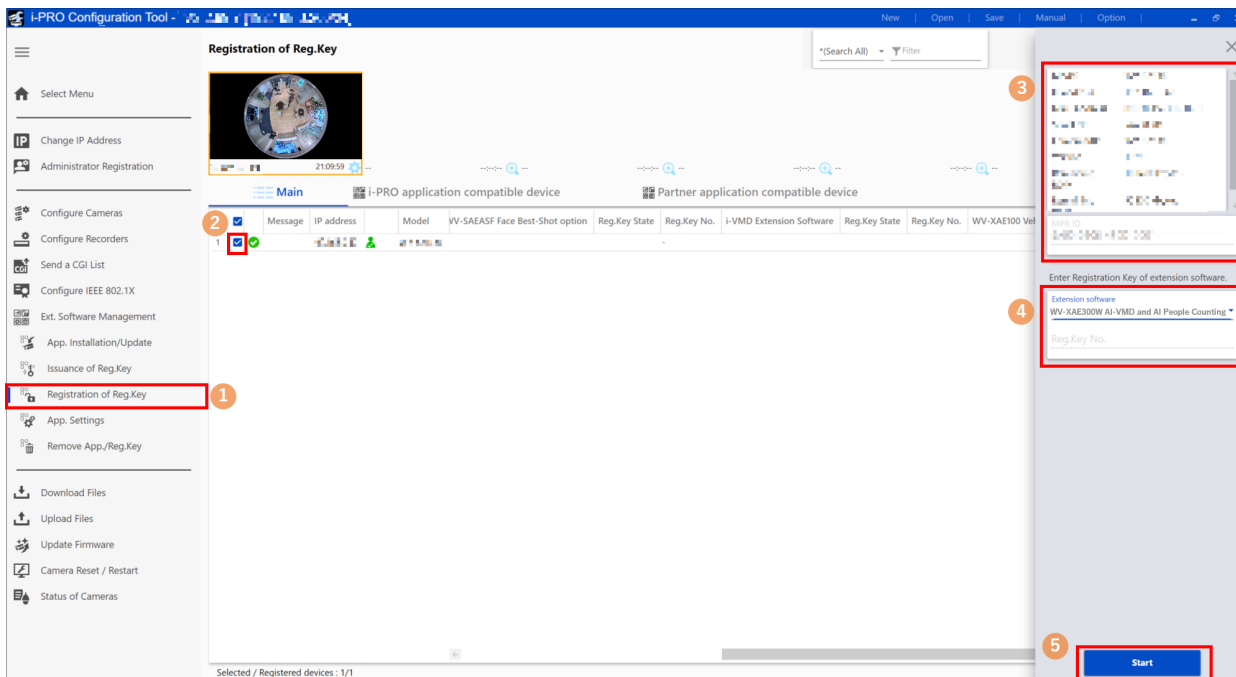
- (7) When the "Confirmation" screen appears, confirm that the process has been successfully completed.
- (8) After the process is complete, click the [Save] button to save list information about the Registration key.

Note

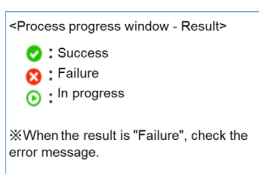
- You must be connected to the Internet before a key can be issued.
 - Be careful not to make errors with the combination of the MPR ID and the Activation Key No. and Registration ID used for that camera (once a Registration key number has been issued for a particular Activation Key No., a Registration key number cannot be issued for the same Activation Key No. in combination with a different MPR ID).
 - To issue a Registration key number for a different camera, follow steps (3) and (4) under **STEP 2**.
-

Activation (continued)

STEP 3 Register the Registration key



- (1) Select the "Registration of Reg.Key" sub-menu.
- (2) Place a check in the check box for the camera for which the Registration key will be registered. (Multiple checks are allowed)
- (3) Select the target camera, and confirm that the model number and other information as well as the MPR ID is displayed.
- (4) Input the following on the setting screen.
 - Extension software: Select "AI-VMD/AI People Counting for 360-degree fisheye"
 - Reg.Key No.: The number issued by the Key Management System (16 digits)
- (5) Click the [Start] button.
- (6) On the Confirmation screen, confirm that the target camera has been checked and then click the [Start] button.



- (7) When the <Process progress window - Result> screen appears, confirm that the registration of the Registration key has been successfully completed.
- (8) After the process is complete, "AI-VMD/AI People Counting for 360-degree fisheye" will be enabled.

Note:

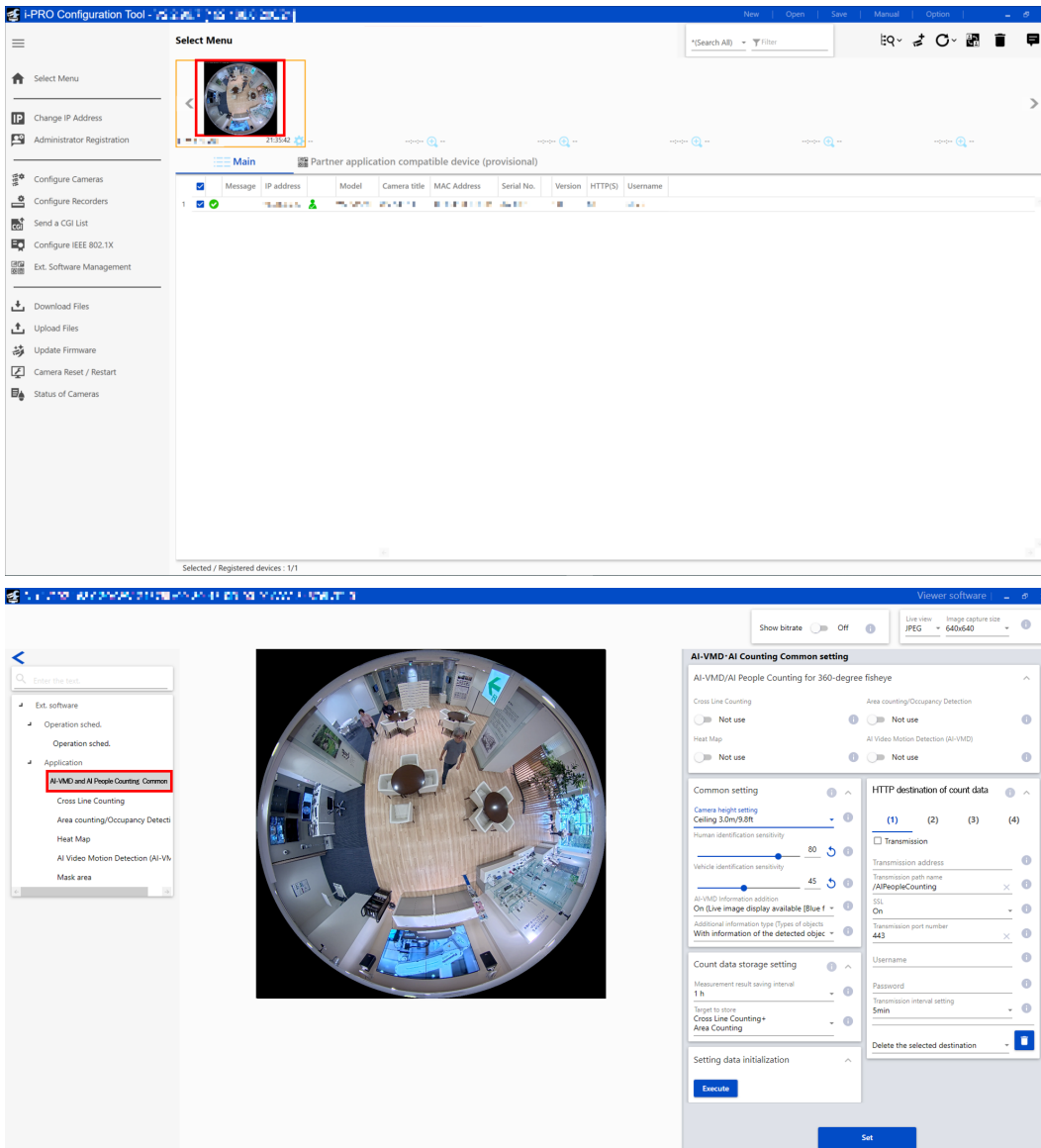
- The registration of the Registration Key is only operable by users whose access level is "1. Administrator". Refer to the Operating Instructions of the camera for how to configure the access level.
- If the installation fails, check the details of the error in the message field.

Common setting

Setup Procedure

1. Open the setting screen

Double-click the thumbnail of the camera to be configured to open the camera setting screen.



In the "Ext. software" menu on the camera setting screen, click on the "AI-VMD and AI People Counting Common" menu to open the AI-VMD/AI People Counting for 360-degree fisheye setting screen.

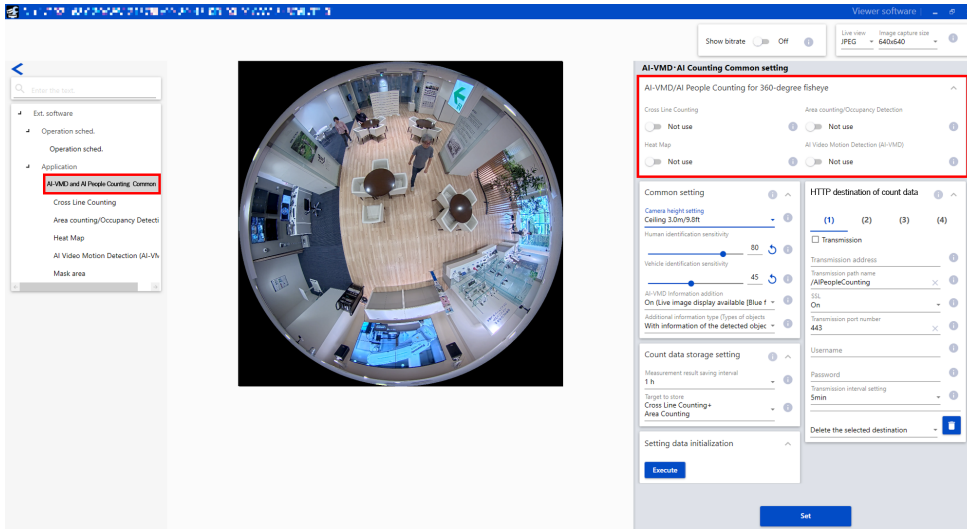
Important

- You cannot open the AI-VMD/AI People Counting for 360-degree fisheye setting screen by clicking on the [AI-VMD and AI People Counting] menu on the Camera's "Setup" menu > "Ext. software" page or by clicking on [Setup]. Use iCT to open the "AI-VMD/AI People Counting for 360-degree fisheye" screen.

Common setting (continued)

2. Select the functions to use

Select the functions you want to use out of AI-VMD, Cross Line Counting, Heat Map, Area Counting/Occupancy Detection.



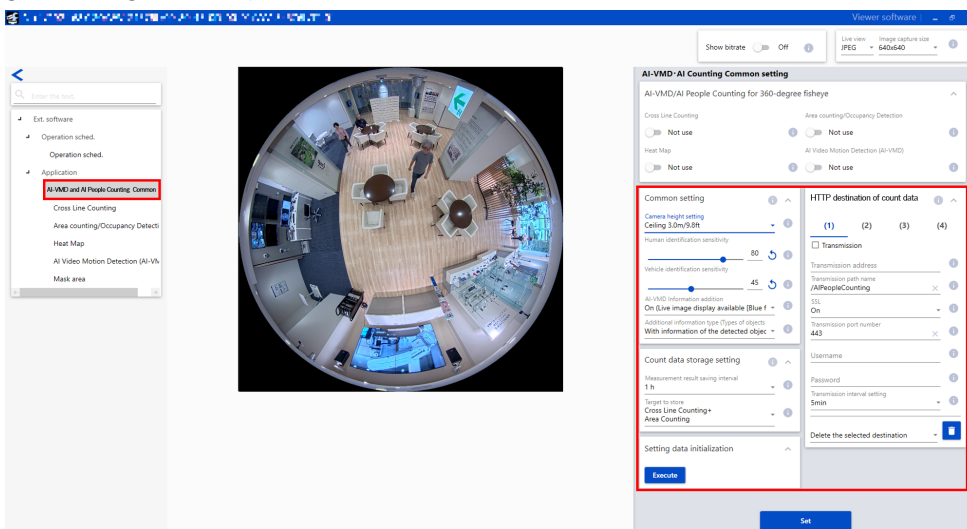
1. In the "Ext. software" menu, click on the "AI-VMD and AI People Counting Common" menu to open the AI-VMD/AI People Counting for 360-degree fisheye setting screen.
2. Switch the toggle switch to "Use" for the functions you want to use.
Default setting: All set to "Not use."

Note:

- If you are using a 9MP camera, the camera may restart at the following situations:
 - one or more functions are switched to "Use" when all four functions are set to "Not use"
 - all four functions are switched to "Not use" when one or more functions are set to "Use"

3. Configure common setting

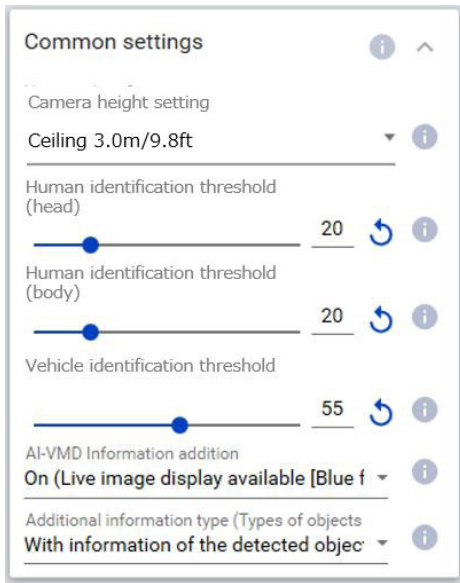
Configure setting shared by all functions.



1. In the "Ext. software" menu, click on the "AI-VMD and AI People Counting Common" menu to open the common setting screen.
2. Configure the items in the tabs. (Refer to the next page for more details)
3. Click the [Set] button to enable the setting.

Common setting (continued)

■ [Common setting] tab



Configure the setting shared by the AI-VMD, Cross Line Counting, Heat Map, Area Counting and Occupancy Detection functions.

Camera height setting

Select the height at which the camera is installed.

Ceiling 2.0m/6.5ft/Ceiling 2.1m/6.9ft/Ceiling 2.2m/7.2ft/Ceiling 2.3m/7.5ft/Ceiling 2.4m/7.8ft/Ceiling 2.5m/8.2ft/
Ceiling 2.6m/8.5ft/Ceiling 2.7m/8.9ft/Ceiling 2.8m/9.2ft/Ceiling 2.9m/9.5ft/Ceiling 3.0m/9.8ft/Ceiling 3.1m/10.2ft/
Ceiling 3.2m/10.5ft/Ceiling 3.3m/10.8ft/Ceiling 3.4m/11.2ft/Ceiling 3.5m/11.5ft/Ceiling 3.6m/11.8ft/
Ceiling 3.7m/12.1ft/Ceiling 3.8m/12.5ft/Ceiling 3.9m/12.8ft/Ceiling 4.0m/13.1ft/Ceiling 4.1m/13.5ft/
Ceiling 4.2m/13.8ft/Ceiling 4.3m/14.1ft/Ceiling 4.4m/14.4ft/Ceiling 4.5m/14.8ft/Ceiling 4.6m/15.1ft/
Ceiling 4.7m/15.4ft/Ceiling 4.8m/15.7ft/Ceiling 4.9m/16.1ft/Ceiling 5.0m/16.4ft

Default setting: Ceiling 3.0m/9.8ft

Human identification threshold (head)

Set the identification threshold for detecting as a head. Smaller values lead to more probability of detection as a human, but more false detection occurs.

1~99

Default setting: 20

Human identification threshold (body)

Set the identification threshold for detecting as a body. Smaller values lead to more probability of detection as a human, but more false detection occurs.

1~99

Default setting: 20

Vehicle identification threshold

Set the identification threshold for detecting as a vehicle. Smaller values lead to more probability of detection as a vehicle, but more false detection occurs.

1~99

Default setting: 55

AI-VMD Information addition

You can set whether to add AI-VMD information (detection frames, detected object type) to image data and whether to display detection frames or locus in live video in a web browser.

Common setting (continued)

If "On (Live image display [blue frame])" is set, a blue frame will be displayed when a moving body is detected in the image. When a detected moving body intrudes into the detection area and an alarm is activated, the color of the frame will change to red. The trajectory of the moving body detected will also be displayed with a green line. It will display the trajectory for approximately the most recent 3 seconds. The AI-VMD Information addition setting does not affect the operations of the alarm.

Off: AI-VMD information will not be added. Also, the detection frames and locus of AI-VMD/Cross Line Counting will not be displayed.

On (no live image display):

AI-VMD information is added, but the detection frames and locus of AI-VMD/Cross Line Counting will not be displayed in the live image.

On (Live image display):

The AI-VMD information will be added, and the detection frames and locus of AI-VMD/Cross Line Counting will also be displayed in the live image. The blue frame will not be displayed.

On (Live image display [blue frame]):

AI-VMD information will be added to the live image, and the detection frames and locus of AI-VMD/Cross Line Counting will also be displayed. In addition to the red frame, the blue frame will also be displayed.

Default setting: On (Live image display [blue frame])

Note

- The "live image" here refers to the live image of the web browser.
-

Additional information type

Set information to add to the image data and the type of frame to display in the live image. These settings are available when the "AI-VMD Information addition" setting above is set to "On."

Detected object (alarm frame info): Adds information about the object detected (Human, Vehicle) and position information about the alarm frame (red) and the body detection frame (blue).

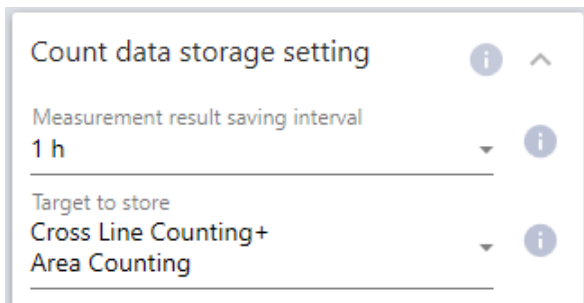
Detected object (alarm frame info): Adds information about the object detected (Human, Vehicle) and position information about the AI frame (green) detected by the AI.

Without information of the detected object:

Adds position information about the alarm frame (red) and the body detection frame (blue) only. Does not add information about the object detected (Human, Vehicle).

Default setting: With information of the detected object (alarm frame information)

■ [Count data storage setting] tab



Set the setting for count data storage shared by the Cross Line Counting, Heat Map, Area Counting and Occupancy Detection functions.

Measurement result saving interval

Set the measurement interval for counting information and map information from [Cross Line Counting], [Heat Map] and [Area Counting]. A file will be created at every measurement interval.

15 min / 1 hour / 12 hours / 24 hours

Default setting: 1 hour

Common setting (continued)

Note

- Counting information, map information and index images from [Cross Line Counting], [Heat Map] and [Area Counting] are stored at the intervals set for "Measurement interval" based on a time zone of UTC 00h 00m ± 30 seconds (the save timing may occur earlier or later due to processing times).
- If the time setting are changed, data may not be acquired correctly from the time of the change until the next save timing. Furthermore, if the time goes backwards considerably so that the time when measurement starts is later than the time when it ends, counting information, map information and index images will not be created by [Cross Line Counting], [Heat Map] and [Area Counting].
- If you want to change the time, turn the functions Off, change the time and then turn them On again.

Target to store

Set the target functions for which counting information and index images will be stored.

Cross Line Counting+Area Counting/

Cross Line Counting+Area Counting+Heat Map/

Cross Line Counting+Area Counting (i-PRO Remo. Service)

Default setting: Cross Line Counting+Area Counting

Note

- Storage times for counting information, map information and index images from [Cross Line Counting], [Heat Map] and [Area Counting] are as follows.
 - If "Cross Line Counting+Area Counting" is selected: 92 days
 - If "Cross Line Counting+Area Counting+Heat Map" is selected: 1 day
 - If "Cross Line Counting+Area Counting (i-PRO Remo. Service)" is selected: 732 day
- * Data will actually be stored for a longer time than that stated above. The excess storage time will differ depending on the camera's time zone setting (maximum 23 hours).
- Example: If the time zone is + 9.00:
- If "Cross Line Counting+Area Counting" is selected: 92 days + 9 hours
 - If "Cross Line Counting+Area Counting+Heat Map" is selected: 1 day + 9 hours
 - If "Cross Line Counting+Area Counting (i-PRO Remo. Service)" is selected: 732 day + 9 hours

■ [HTTP destination of count data] tab

HTTP destination of count data

(1) (2) (3) (4)

Transmission

Transmission address

Transmission path name
/AllPeopleCounting

SSL
On

Transmission port number
443

Username

Password

Transmission interval setting
5min

Delete the selected destination

Set the transmission destination (1 to 4) and notification interval for sending count data via HTTP, which shared by the Cross Line Counting, Area Counting and Occupancy Detection functions.

■ Transmission destination 1, Transmission destination 2, Transmission destination 3, Transmission destination 4

Count information notifications can be sent individually to up to 4 addresses. The setting for the four transmission destinations are the same.

Common setting (continued)

Transmission

Check it to send information.

Default setting: Unchecked

[Transmission address]

Input the IP address of the transmission destination.

(except 0.0.0.0)

[Transmission path name]

Input the path name of the transmission destination. Input up to 128 alpha-numeric characters or symbols.

SSL

Select whether to use SSL for transmission.

Default setting: On

Transmission port number

Set the port number of the transmission destination.

1 - 65535

Username

Input the user name for authentication with the transmission destination. Input up to 128 alpha-numeric characters or symbols.

Password

Input the password for authentication with the transmission destination. Input up to 63 alpha-numeric characters or symbols.

Transmission interval setting

Select the time interval for transmission.

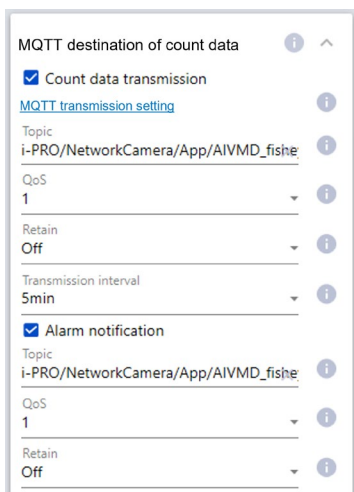
5sec, 10sec, 15sec, 1 min, 5 min, 10 min, 15 min, 30 min, 60 min

Default setting: 5 min

Note

- For details on HTTP periodic transmission, refer to the "AI Motion Detection/AI People Counting Application I/F Specification" in the following URL.
<https://i-pro.com/global/en/surveillance/training-support/support/technical-information> <Control No.: C0321>

■ [MQTT destination of count data] tab



The screenshot shows the 'MQTT destination of count data' configuration page. It features two main sections: 'Count data transmission' and 'Alarm notification'. Both sections are checked. The 'Count data transmission' section includes a link to 'MQTT transmission setting', a 'Topic' field with the value 'i-PRO/NetworkCamera/App/AIVMD_fishe', a 'QoS' dropdown set to '1', and a 'Retain' dropdown set to 'Off'. The 'Transmission interval' dropdown is also set to '5min'. The 'Alarm notification' section has the same 'Topic', 'QoS', and 'Retain' settings.

Set the transmission content and transmission interval for count data and alarm notification via MQTT.

Common setting (continued)

Transmission of count data

Check the box to send count data.

Default setting: Unchecked

[Alarm notification]

Check the box to send alarms notification.

Default setting: Unchecked

MQTT transmission setting

Click to display the MQTT setting screen of the camera.

Topic

Enter the name of the MQTT topic to be sent. Enter single-byte alphanumeric or symbols, up to 128 characters.

QoS

Select QoS level 0, 1, or 2. Communication quality is higher with $0 < 1 < 2$.

0: Messages are delivered at most once with QoS0. There is no guarantee that the message will reach the server.

1: Messages are delivered at least once with QoS1. It is assured that the message will reach its destination, but it may be duplicated.

2: Messages are delivered exactly once with QoS2. It is assured that the message will arrive only once, no more no less.

Default setting: 1

Retain

Select to have the last notified message stored on the MQTT server.

Default setting: Off

Transmission interval (Transmission of count data only)

Select the time interval for transmission of count data.

5sec, 10sec, 15sec, 1 min, 5 min, 10 min, 15 min, 30 min, 60 min

Default setting: 5 min

■ Setting data initialization

Click on the [Execute] button to reset all setting data for this product to the default setting.



Cross Line Counting

Configure the setting for each function

This chapter explains the procedure for setting each function.

Configure Cross Line Counting setting (this page)

Configure Area Counting/Occupancy Detection setting (☞ page 26)

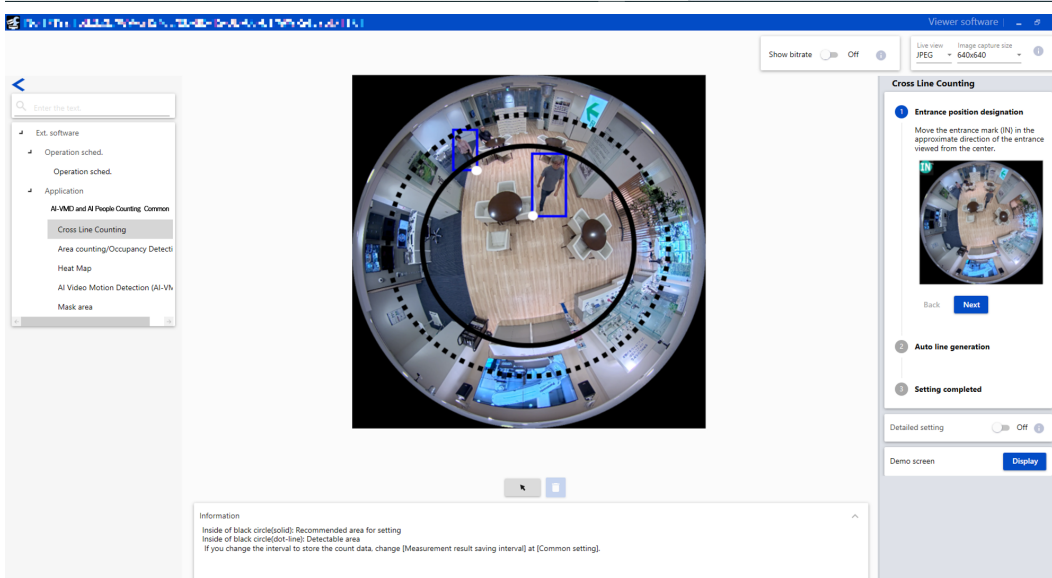
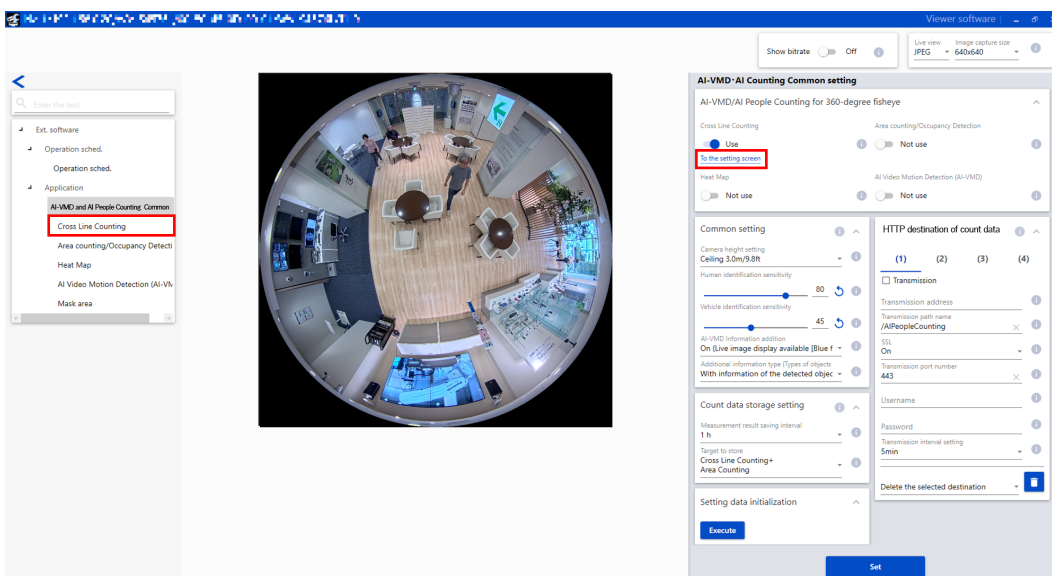
Configure Heat Map setting (☞ page 30)

Configure AI-VMD setting (☞ page 33)

Configure Cross Line Counting setting

1. Open the setting screen

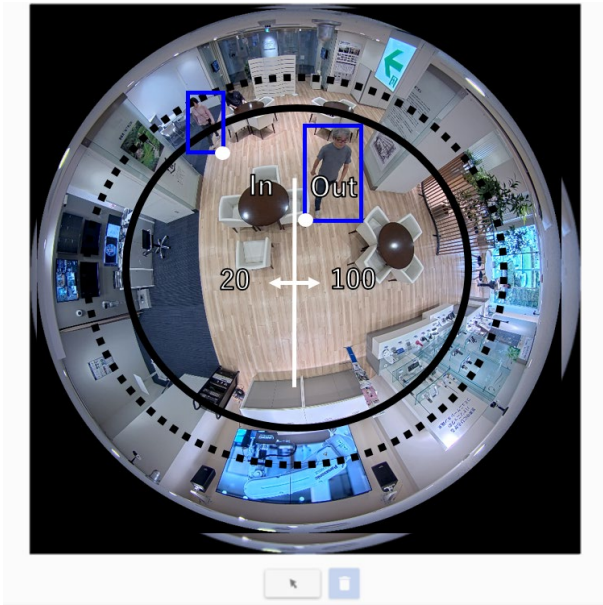
In the "Ext. software" menu on the camera setting screen, click on the "Cross Line Counting" menu, or click on the "To the setting screen" link to open the Cross Line Counting setting screen.



Cross Line Counting (continued)

2. Line setting (automatic line setting)

■ Drawing area





Camera image screen

This screen displays drawings of the detection line and the frames around the detected persons. To draw the detection line automatically, follow the procedure in the "■ Line Setting (automatic)" section. To draw multiple lines manually, follow the procedure in "3. Detailed setting (manual line setting)" to set the lines. Persons will be counted based on the detection lines set by drawing. Detection frames around persons will be displayed in two colors.

- People detection (in red frames): Persons who cross the line towards the set direction are displayed with a red frame.
- People detection (in blue frames): Persons who proceed in a direction other than the one set are displayed with a blue frame.

Drawing types

Click on the icon to select the drawing formula.

-  Detection line (select) : Select the detection line drawn.
-  Delete : If you click this button after selecting a detection line, the line selected will be removed.

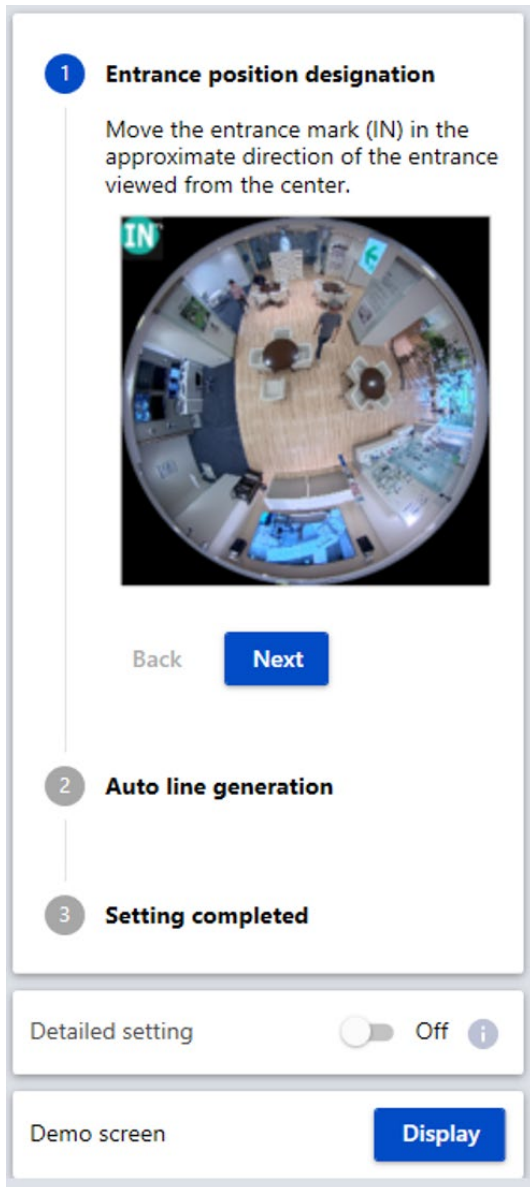
Note

- The area outside the black circle (solid) is outside the recommended area for setting for the detection line. Setting an area outside the recommended setting range will lower the performance of the detection function.
- The area outside the black circle (dot-line) is outside the detectable area for the detection line. Nothing can be detected if you set an area outside the detectable area.
- The white dot in the person detection frame is the position of the person's feet. When the white dot crosses the detection line in the set direction, the count increases.

Cross Line Counting (continued)

■ Line Setting (automatic)

This automatically sets lines for counting people. To set multiple lines or to draw lines manually, refer to "3. Detailed setting (manual line setting)."



STEP 1. Entrance position designation

Move the entrance mark (IN) in the approximate direction of the entrance as viewed from the center. The position of the "IN" mark can be changed by dragging.

STEP 2. Auto line generation

When you click on the [Next] button, a white line will appear in the camera image.

You can change the length of the line by dragging the end of the line after auto line generation.

STEP 3. Setting completed

Click on the [Finished] button to enable the line setting.

Important

- The length of the line is adjusted based on the width of the door.
- The line can also be rotated or moved in a parallel direction, but we recommend the initial position.
- The line set automatically corresponds to line 1 (white) in "3. Detailed setting (manual line setting)".

Demo screen

Click the [Display] button to open the demo screen in a separate window. For details about the demo screen display, refer to "Demo screen".

Note

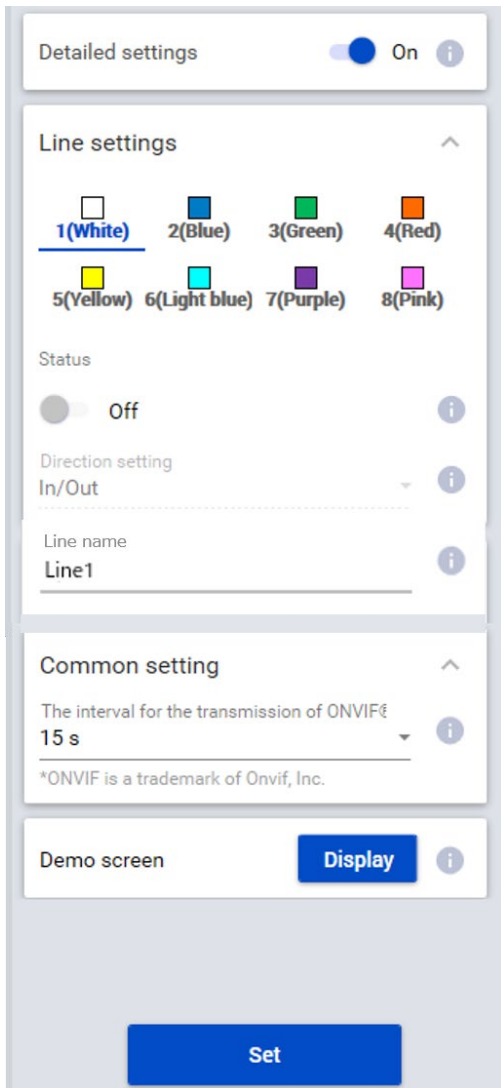
- When the demo screen is executed, the detection frame will not be displayed on the setting screen.
- JPEG (1) is displayed on the demo screen. If the JPEG (1) resolution is high, the screen's refresh rate will slow down, so we recommend a resolution of 1280×1280 or lower.
- If there are many people on the screen, frames may not be displayed for all of them.
(Estimate: setting screen: 30 people, demo screen: 100 people)

Cross Line Counting (continued)

3. Detailed setting (manual line setting)

Select "On," to display manual setting for drawing lines for counting people and the interval for the transmission of ONVIF metadata setting.

■ Line Setting (manual)



Line setting

Drag with the mouse pointer on the camera image to set lines. Lines can be set in a maximum of 8 places.

Status

On or Off lines set to determine whether to use them for counting people or not.

On: Count people.

Off: Do not count people.

Default setting: Off

Direction setting

Specify the direction for counting people.

In direction, Out direction, In/Out direction.

Default setting: In/Out direction

Line name

Set a name up to 20 characters for each area. The set detection area name will be displayed on the i-PRO Active Guard dashboard.

Default setting: Line 1~8

Unavailable characters: Half-width symbols "" "" "&"

The interval for the transmission of ONVIF metadata

Set the interval for the transmission of ONVIF metadata.

15 sec, 1 min

Default setting: 15 s

[Set] button

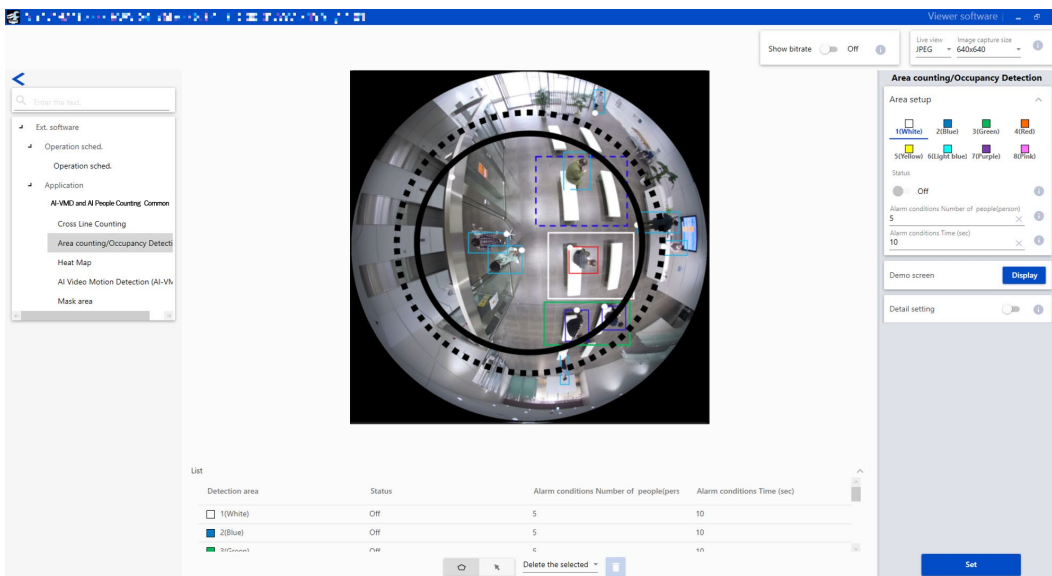
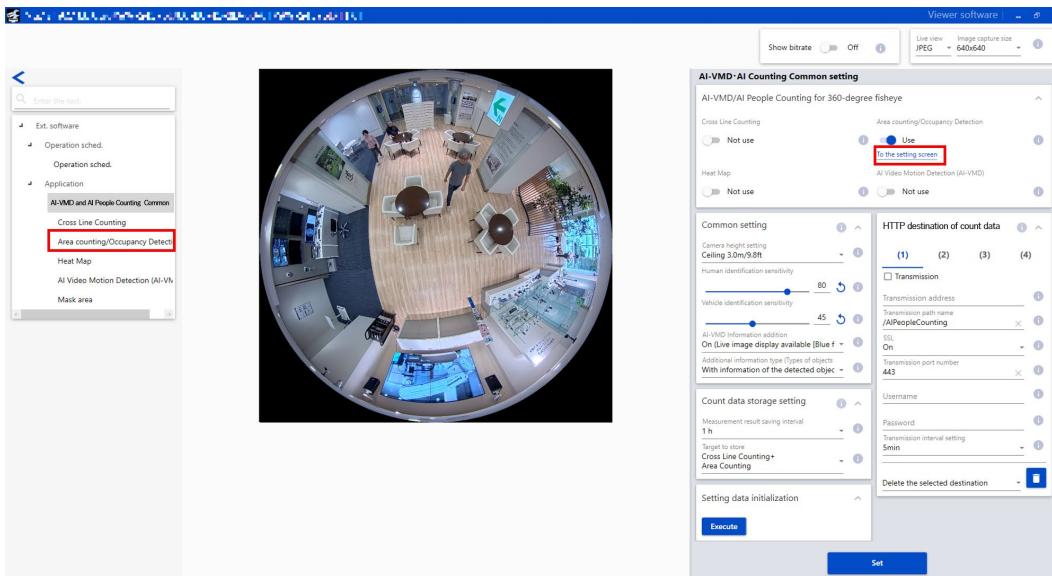
Click this button to save the contents of the detailed setting tab as currently displayed.

Area Counting/Occupancy Detection

Configure Area Counting/Occupancy Detection setting

1. Open the setting screen

In the "Ext. software" menu on the camera setting screen, click on the "Area Counting/Occupancy Detection" menu, or click on the "To the setting screen" link to open the Area Counting/Occupancy Detection setting screen.



Area Counting/Occupancy Detection (continued)

2. Area setting

■ Drawing area (set detection area)



Camera image screen

This screen displays drawings of the detection area and the frames around the detected persons. To draw the detection area, select the "detection area (polygon)" icon you want to draw from "Drawing types" and drag it to the camera image screen. Persons will be counted and an alarm will be activated based on the detection area set by drawing. Detection frames around persons will be displayed in three colors.

- People detection (in red frames): The people in the area where an alarm has occurred are displayed in red frames.
- People detection (in blue frames): The people who have entered an area are displayed in blue frames.
- People detection (in light blue frames): The people who are not in any area are displayed in light blue frames.

Drawing types

Click on the icon to select the drawing formula.

- Detection area (polygon) : Draw the detection area as a polygon (maximum 16 sides).
- Detection line (select) : Select the detection line drawn.
- Delete : If you click it after selecting a detection line, the line selected will be removed.

Note

- The area outside the black circle (solid) is outside the recommended area for setting for the detection area. Setting an area outside the recommended setting range will lower the performance of the detection function.
- The area outside the black circle (dot-line) is outside the detectable area for the detection area. Nothing can be detected if you set an area outside the detectable area.
- When the demo screen is displayed, the people detection frame will not be displayed on the camera image screen.
- The people detection frame can be displayed on only one browser. It does not support simultaneous access by multiple browsers.
- Please reload the browser since detection frames are not displayed automatically even after the demo screen is closed.
- When a detection area (polygon) is drawn, the area setting is completed by selecting the starting point in the end.
- To change a detection area, click the [Delete] button to delete it, and then set it again.
- The position of the detection frame is the position of the white dot in the detection frame. Please set the detection area so that the position of this detection frame falls within the detection area.

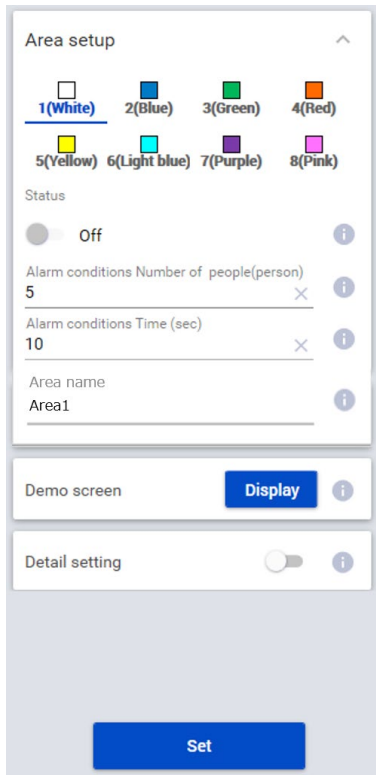
Refer to "About the detection frame" (👉 page 42) for details.

Area Counting/Occupancy Detection (continued)

Area setup

The setting for a maximum of 8 detection areas are distinguished by the color of the drawing line. The colors of the drawing lines are set in order starting from "1 (white)."

Default setting: No setting for [Area 1]/[Area 2]/[Area 3]/[Area 4]/[Area 5]/[Area 6]/[Area 7]/[Area 8]



Status

Set whether to enable the counting of people in an area.

On: Occupancy detection is enabled. Frames are displayed in solid lines for areas with occupancy detection enabled.

Off: Occupancy detection is disabled. Frames are displayed in dashed lines for areas with occupancy detection disabled.

Default setting:

Off for [Area 1]/[Area 2]/[Area 3]/[Area 4]/[Area 5]/[Area 6]/[Area 7]/[Area 8]

Alarm conditions Number of people (person)

Sets the number of people to activate alarms separately for each area.

Settable range: 1-100 (persons)

Default setting: 5

Alarm conditions Time (sec)

Alarms will be activated if the set number of people for each area is exceeded continuously during the set time period. Set this time period.

Settable range: 1-600 (sec)

Default setting: 10

Note

- The maximum number of people detected in the image is 100.
- If the number of people in the image exceeds 100, correct occupancy detection will not be possible since some of the people cannot be detected.
- For the method of counting the passage of time when the number of people detected is less than the number of people set in alarm conditions, refer to "3. Detailed setting."

Area name

Set a name up to 20 characters for each area. The set detection area name will be displayed on the i-PRO Active Guard dashboard.

Default setting: Area 1~8

Unavailable characters: Half-width symbols "" "" "&"

Demo screen

Click the [Display] button to open the demo screen in a separate window. For details about the demo screen display, refer to "Demo screen."

Note

- When the demo screen is executed, the detection frame will not be displayed on the setting screen.
- JPEG (1) is displayed on the demo screen. If the JPEG (1) resolution is high, the screen's refresh rate will slow down, so we recommend a resolution of 1280×1280 or lower.
- If there are many people on the screen, frames may not be displayed for all of them.
(Estimate: setting screen: 30 people, demo screen: 100 people)

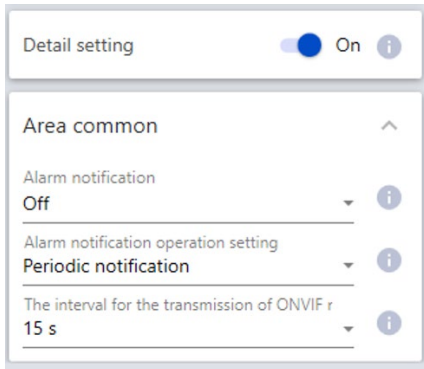
[Set] button

Click this button to save the contents of the area setting and the detailed setting tab as currently displayed.

Area Counting/Occupancy Detection (continued)

3. Detail setting

Select "On" to display alarm setting and the interval for the transmission of ONVIF metadata setting.



■ Alarm notification

Select whether to notify the alarm.

Default setting: Off

■ Alarm notification operation setting

Set the notification operation when the "Number of people (person)" in "Alarm conditions" is exceeded continuously after the alarm is detected.

Periodic notification : The alarm notification is issued at the "Time (sec)" interval in "Alarm conditions."

Continuous notification : The alarm notification is issued continuously at the camera's "Alarm deactivation time" interval.

One-time notification : The alarm notification is issued only the first time the alarm conditions of "Number of people (person)" and "Time (sec)" are met.

Default setting: Periodic notification

Note

- The alarm ID (decimal number) is as follows for each detection area.

[Area 1] 98, [Area 2] 99, [Area 3] 100, [Area 4] 101, [Area 5] 102, [Area 6] 103, [Area 7] 104, [Area 8] 105

■ The interval for the transmission of ONVIF metadata

Set the interval for the transmission of ONVIF metadata.

15 sec, 1 min

Default setting: 15 s

[Set] button

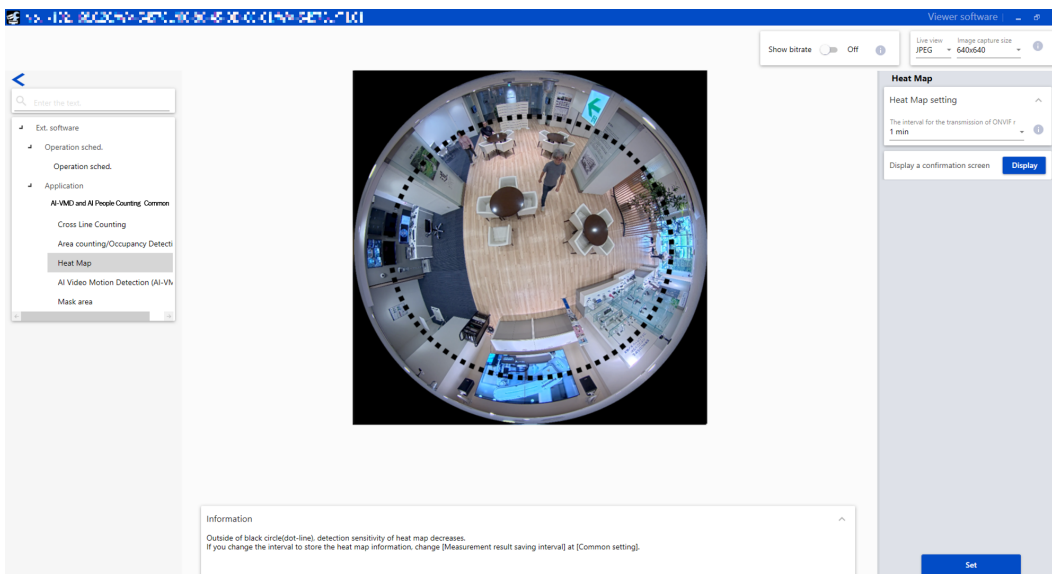
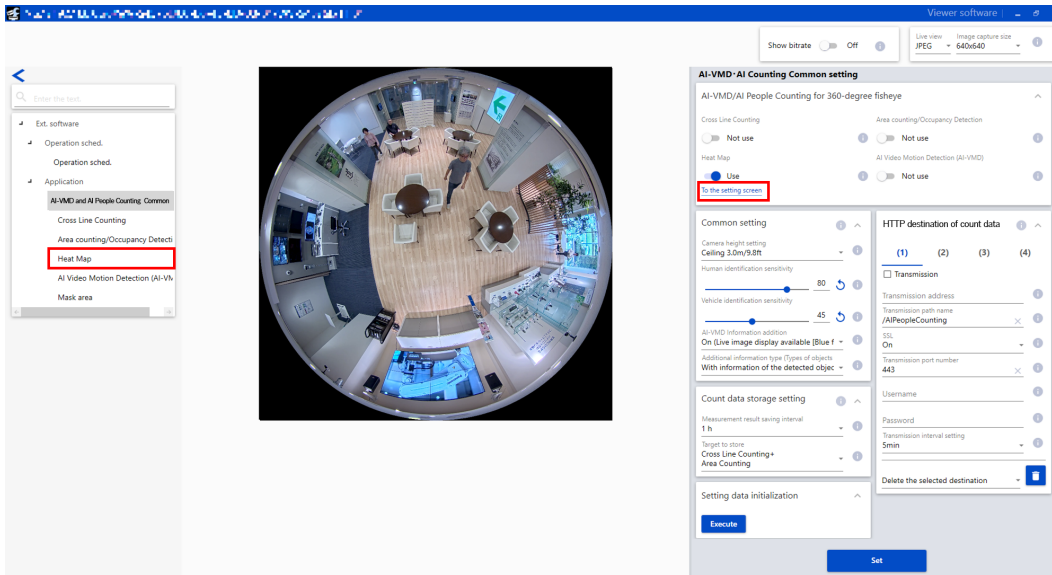
Click this button to save the contents of the area setting and the detailed setting tab as currently displayed.

Heat Map

Configure Heat Map setting

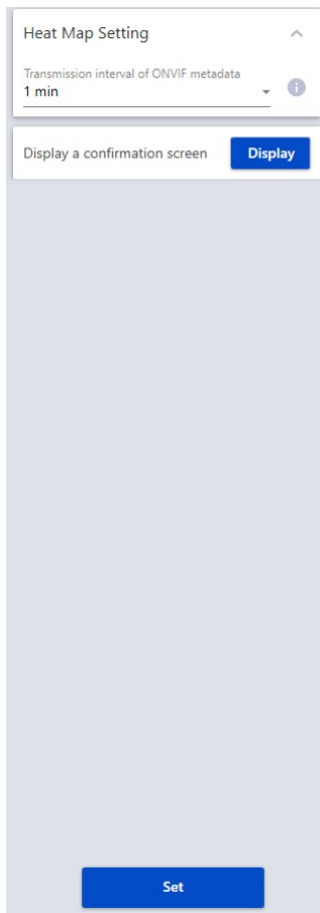
1. Open the setting screen

In the "Ext. software" menu on the camera setting screen, click on the "Heat Map" menu, or click on the "To the setting screen" link to open the Heat Map setting screen.



Heat Map (continued)

2. Heat Map setting



Transmission interval of ONVIF metadata

Set the interval for the transmission of ONVIF metadata.

1 min, 5 min, 15 min

Default setting: 1 min

Note

- To change the storage interval for heat map information, change "Interval to store" on the "Common setting" screen.
-

Display a confirmation screen

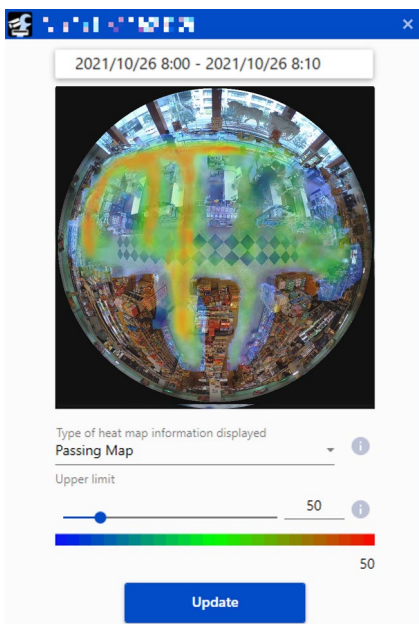
Click the [Display] button to open the Confirmation screen in a separate window. For details about displaying a Confirmation screen, refer to "3. Confirmation screen."

[Set] button

Click this button to save the contents of the setting currently displayed.

3. Confirmation screen

Click on the [Display] button next to [Display a confirmation screen] to open the Confirmation screen in a separate window and display the latest heat map.



Heat Map (continued)

Display map information

Displays the latest passing map or loitering map. The passing map will be displayed first when the Confirmation screen is opened.

Date and time of heat map information displayed

Displays the date and time (year, month, day, hour, minutes) when the heat map information being shown on the Confirmation screen was measured.

Type of heat map information displayed

Displays the type of heat map information being shown on the Confirmation screen was measured.

Passing map, loitering map

Upper limit

Displays the area where a value exceeding the value set was counted in red.

This value represents "The number of people passing through [person]" in the case of a passing map, and "The average loitering time [sec] of the loitering people" in the case of a loitering map.

(Passing map) 3-65535, (Loitering map) 1-655

Default value: (Passing map) 50, (Loitering map) 5

[Update] button

Updates the information for the heat map information being shown on the Confirmation screen to the latest version.

Note

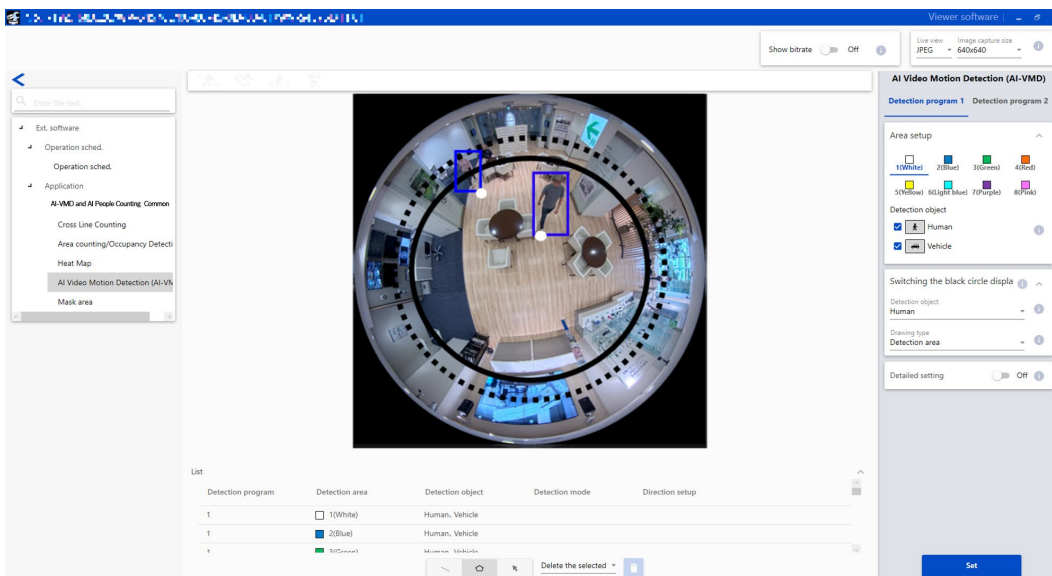
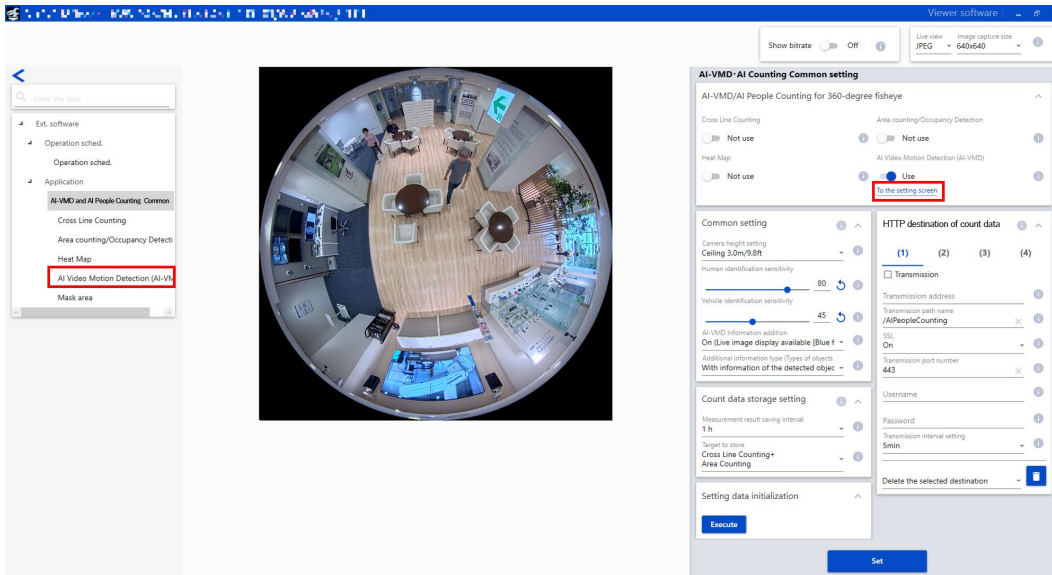
- The area outside the black circle (dot-line) is outside the effective range for the Heat Map.
 - After 5 minutes or more have passed since the Heat Map was changed to "Use" in the Common setting, the heat map information will be saved at each "Measurement result saving interval" based on the UTC time of 00:00:30 ± time zone.
-

AI-VMD

Configure AI-VMD setting

1. Open the setting screen

In the "Ext. software" menu on the camera setting screen, click on the "AI Video Motion Detection (AI-VMD)" menu, or click on the "To the setting screen" link to open the AI-VMD setting screen.

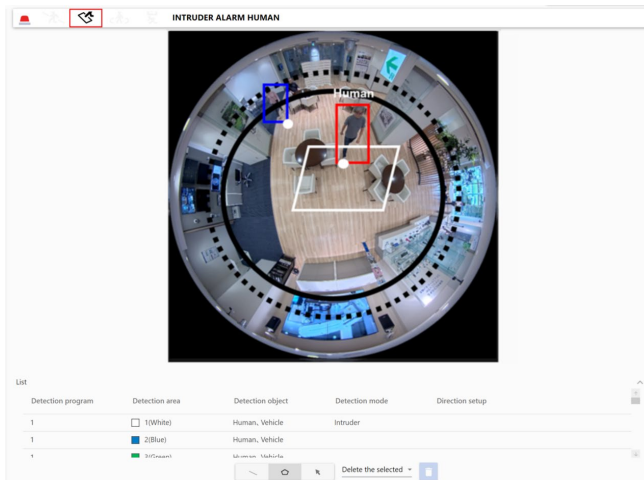


AI-VMD (continued)

2. Area setting

Set the detection area and conditions for detecting moving bodies using AI-VMD.

Select either humans or vehicles as the detection object for each detection area. For the detection mode, select from Intruder, Loitering or Cross Line. Up to 8 detection areas can be set for each setting. Two types of area and detection condition combinations can be set. They can be saved as AI-VMD(Detect 1) and AI-VMD(Detect 2).



■ Alarm activation notification area



If a moving body is detected through AI-VMD, the alarm icon and an icon corresponding to one of the three detection modes will light up. When you click on the alarm icon, the alarm status will be canceled and the lights for all icons will be turned off.

 : Cross Line (CROSS LINE)

 : Intruder (INTRUDER)

 : Loitering (LOITERING)

■ Drawing area (set detection area/line)





Camera image screen

This screen is used for drawing the detection area or detection line. To draw, select the "Detection area (polygon)" or "Cross Line" icon you want to draw from "Drawing types" and drag it to the camera image screen. When a moving body is detected in the detection area set by drawing, an alarm will be activated. An alarm is also activated when a moving body crosses the set detection line.

AI-VMD (continued)

Drawing types

Click on the icon to select the drawing formula.

	Cross Line	: Draw a detection line for Cross Line.
	Detection area (polygon)	: Draw the detection area as a polygon (maximum 16 sides).
	Detection line (select)	: Select the detection line drawn.
	Delete	: If you click on "Delete selected area" or "Delete all" after selection, the detection area selected will be removed.

Note

- When a detection area (polygon) is drawn, the area setting is completed by selecting the starting point in the end.
- The area outside the black circle (solid) is outside the recommended area for setting for detection areas and detection lines. Setting an area outside the recommended setting range will lower the performance of the detection function.
- The area outside the black circle (dot-line) is outside the detectable area for detection areas and detection lines. Nothing can be detected if you set an area outside the detectable area.
- The size of the black circle (solid, dot-line) will differ depending on the detection area and detection lines. When setting the detection area, the black circle (solid and dot-line) for detection areas will be displayed on the camera image screen. When setting the detection line, the black circle (solid and dot-line) for detection areas will be displayed on the camera image screen.
- You can change the size, length and shape of the detection area and detection line selected in "detection area (select)" by dragging a corner of the frame or the end of the line. You can also move the frame or line by dragging the line or the inside of the frame.
- If multiple detection areas or detection lines are overlapping when you try to delete a detection area or line, left-click with the mouse inside the overlapping area to switch sequentially between frames.
- The position of the detection frame is the center of the lower side of the detection frame. Please set the detection area so that the position of this detection frame falls within the detection area.
- You cannot select multiple detection areas or detection lines at the same time.
- The default setting sets the whole drawing area as the detection area.

■ Detection conditions

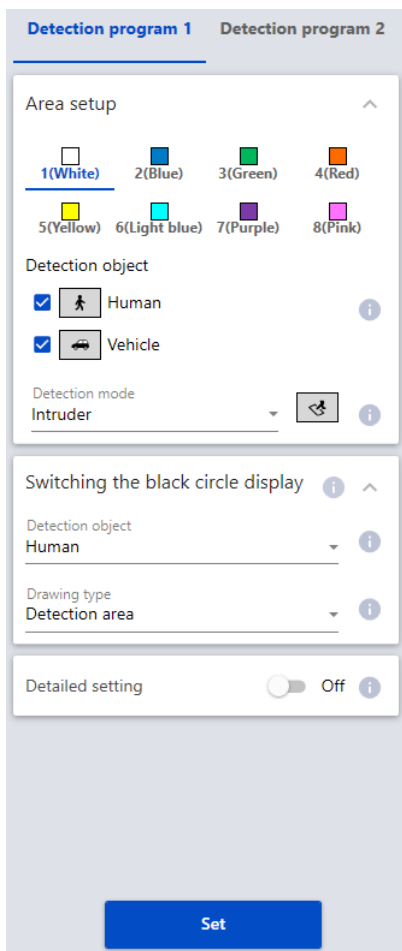
Detection program 1, Detection program 2

Select the "Detection program 1" and "Detection program 2" tabs and set one or two detection conditions. If two conditions are set, they can be executed simultaneously or individually by using the Schedule setting (👉 page 40).

Note

- The default setting of the schedule has AI-VMD (Detect 1) and AI-VMD (Detect 2) in a constantly active state.
 - When using i-PRO Active Guard, only alarms generated by Detection program 1 will be notified as events.
-

AI-VMD (continued)



Area setup

The setting for a maximum of 8 detection areas and detection lines are distinguished by the color of the drawing line. The colors of the drawing lines are set in order starting from "1 (white)."

Default setting: No setting for [Area 1]/[Area 2]/[Area 3]/[Area 4]/
[Area 5]/[Area 6]/[Area 7]/[Area 8]

Detection object

Check the object (moving body) you want to detect in each detection area. The following are the two types of objects that can be detected.

- Human
- Vehicles (normal cars, buses, trucks)

Default setting: Both Human and Vehicle are checked

Note

- The two detection objects can be used in combination.
 - Place checks next to both if you want to detect all moving objects.
 - If multiple detection objects are suggested, the results will be output with vehicles taking priority over the human. Removing the check mark from objects that do not need detection may improve the results received. For example, if a human being is standing in front of a vehicle, the human may be detected and output as a vehicle. If you remove the check mark for vehicles, the human will be output as a human.
-

Detection mode

Select the detection mode for the detection areas or detection lines set.

Intruder: Detects when a moving body intrudes upon the detection area.

Loitering: Detects when a moving body remains still in the detection area for a specific period of time.

Cross Line: Detects when a moving body crosses the detection line in a specified direction.

Default setting: Intruder

Switching the black circle display

Select the detection object and the drawing type to switch between the detectable area (black circle [dot-line]) and the recommended area for setting (black circle [solid]) displayed on the camera image screen.

Detection object: Select the objects (moving bodies) you want to detect using the detection areas and detection lines set.

Default setting: Human

Drawing type: Select the type of drawing you want to make.

Default setting: Detection area

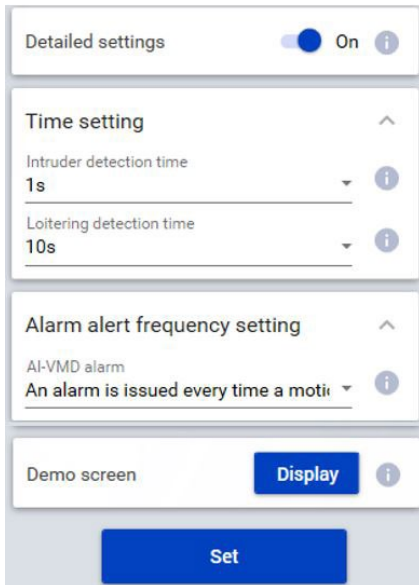
[Set] button

Click this button to save the contents of the area setting and the detailed setting tab as currently displayed.

AI-VMD (continued)

3. Detailed setting

Select "On" to display the detection time setting.



■ Time setting

Set the time period from detection to the activation of the alarm.

Intruder detection time

Set the time from the moment an intruder is detected to the activation of the alarm.

0.2 s, 0.4 s, 1 s, 2 s, 3 s, 4 s, 5 s, 10 s

Default setting: 1 s

Loitering detection time

Set the time from the moment loitering is detected to the activation of the alarm.

10 s, 20 s, 30 s, 1 min, 2 min

Default setting: 10 s

Note

- Depending on the movements of the object, the time before the alarm activates may be longer than the value set.
-

Alarm alert frequency setting

Select the timing of AI-VMD alarm notification.

An alarm is issued only when a motion is detected for the first time: Notification only the first time an alarm is detected.

An alarm is issued every time a motion is detected: Notification every time an alarm is detected.

Default setting: "An alarm is issued every time a motion is detected"

Demo screen

Click the [Display] button to open the demo screen in a separate window. For details about the demo screen display, refer to "Demo screen."

[Set] button

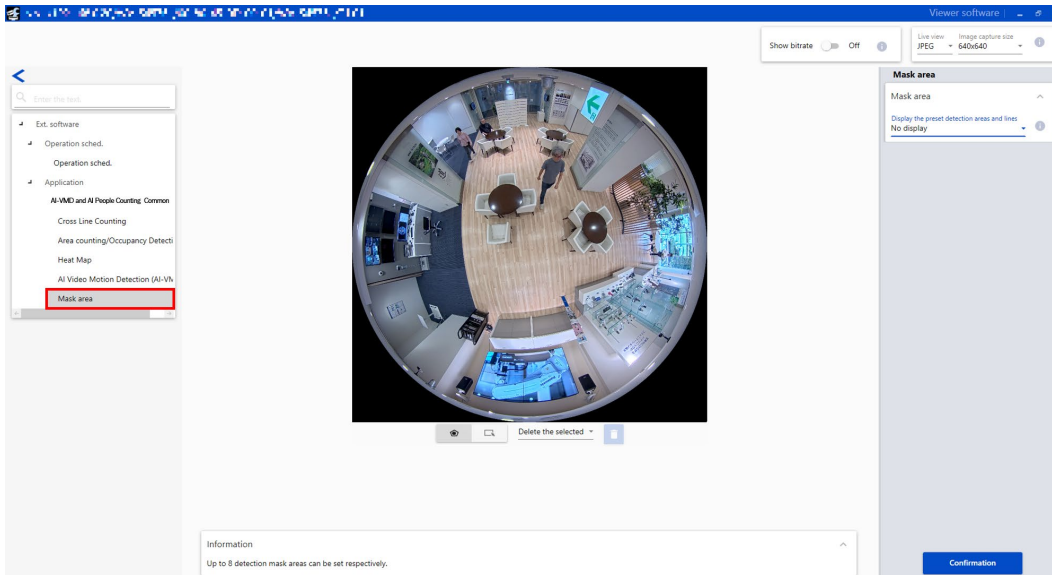
Click this button to save the contents of the area setting and the detailed setting tab as currently displayed.

Mask Area

Configure Mask Area setting

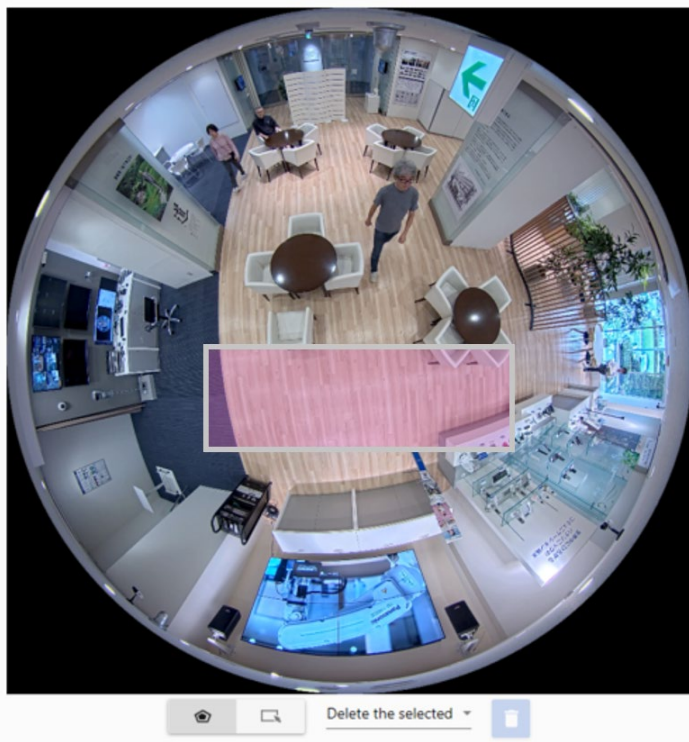
1. Open the setting screen

In the "Ext. software" menu on the camera setting screen, click on the "Mask area" menu to open the Mask area setting screen.






2. Mask area

Configure Mask area shared by all the functions (Cross Line Counting, Area Counting, Occupancy Detection, Heat Map and AI-VMD) of this product. Mask areas can be set in a maximum of 8 places.



Mask Area (continued)

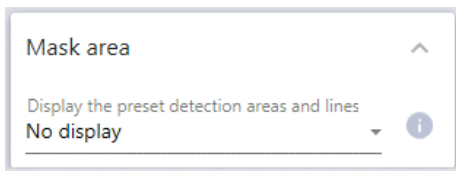
- | | | |
|---|---------------------|--|
|  | Mask area (polygon) | : Draw the detection area as a polygon (maximum 16 sides). |
|  | Mask area (select) | : Select the detection area (detection line) drawn. |
|  | Delete | : If you click on "Delete selected area" or "Delete all" after selection, the detection area selected will be removed. |
-

Note

- When a mask area (polygon) is drawn, the area setting is completed by selecting the starting point in the end.
 - You can change the size, length and shape of the mask area selected in "Mask area (select)" by dragging a corner of the frame or the end of the line.
You can also move the frame or line by dragging the line or the inside of the frame.
 - You cannot select multiple detection areas, detection lines or mask areas at the same time.
-

Display the preset detection areas and lines

Switch between the displays for the preset areas and lines for each function. The preset areas and lines and the frames around people (red/blue/light blue) will be displayed according to the function selected.



AI-VMD (Detect 1), AI-VMD(Detect 2), Cross Line Counting, Area Counting/Occupancy Detection
Default setting: No display

Note

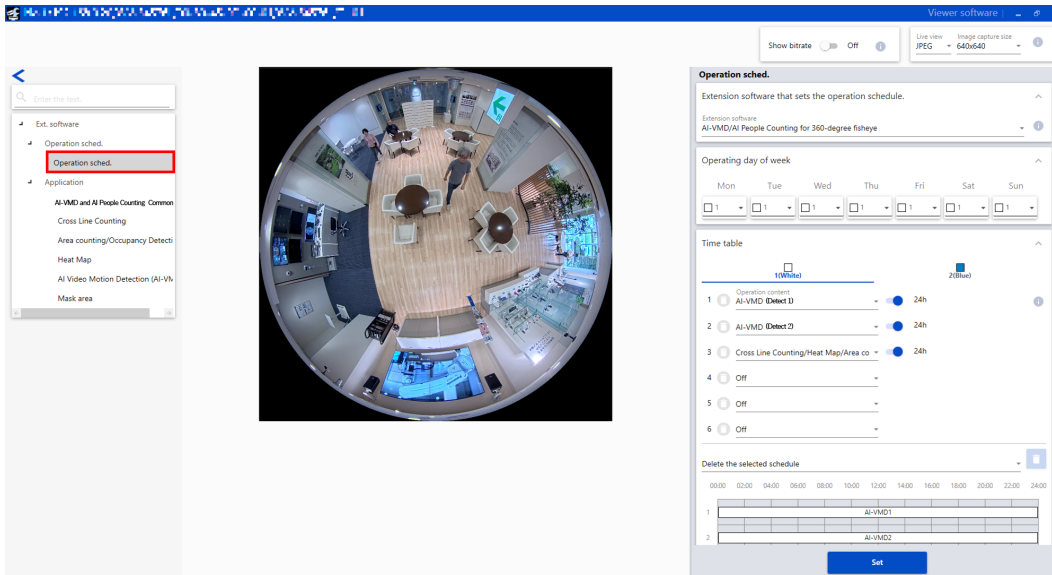
- The frames for people in AI-VMD(Detect 1) and the frames for people in AI-VMD(Detect 2) (red/blue) will be displayed at the same time.
 - After the displayed detection area and detection line are selected by clicking, the position and length can be adjusted.
-

Schedule setting

Configure Schedule setting

1. Open the setting screen

In the "Ext. software" menu on the camera setting screen, click on the "Operation sched." menu to open the Schedule setting screen.



2. Schedule setting

Operating day of week

Set the days of the week that this product will operate on.

You can select the days you want to operate the product on for "Time table 1" and "Time table 2" individually. If a day is set to "Off," the product will not run on that day.

Time table 1: Mon, Tue, Wed, Thur, Fri, Sat, Sun

Time table 2: Mon, Tue, Wed, Thur, Fri, Sat, Sun

Off : Mon, Tue, Wed, Thur, Fri, Sat, Sun

Default setting: Time table 1, Mon-Sun all selected

Time table 1, Time table 2

Set the times for this product to operate and the details of the operation.

For "Timetable 1" and "Timetable 2," you can set up to 6 items each as times to operate.

The time to operate can be set to correspond with the days set under "Operating day of week."

Time

Configurable time: 00:00-23:59 (24-hour clock)

Default setting: 00:00-00:00

Note

- If 00:00 is set in the right-side column for the range of time, it means a time of 24:00.
-

Schedule setting (continued)

Details of operation

Select the detection setting to be operated by this product.

Off: AI-VMD/AI People Counting will not operate.

AI-VMD(Detect 1): Operates AI-VMD based on the conditions of Detection setting 1.

AI-VMD(Detect 2): Operates AI-VMD based on the conditions of Detection setting 2.

Cross Line Counting/Heat Map/Area Counting/Occupancy Detection: Operates Cross Line Counting/Heat Map/Area Counting/Occupancy Detection

Default setting: Time 1: AI-VMD(Detect 1)

Time 2: AI-VMD(Detect 2)

Time 3: Cross Line Counting/Area Counting/Occupancy Detection/Heat Map

Time 4-6: Off

[Set] button

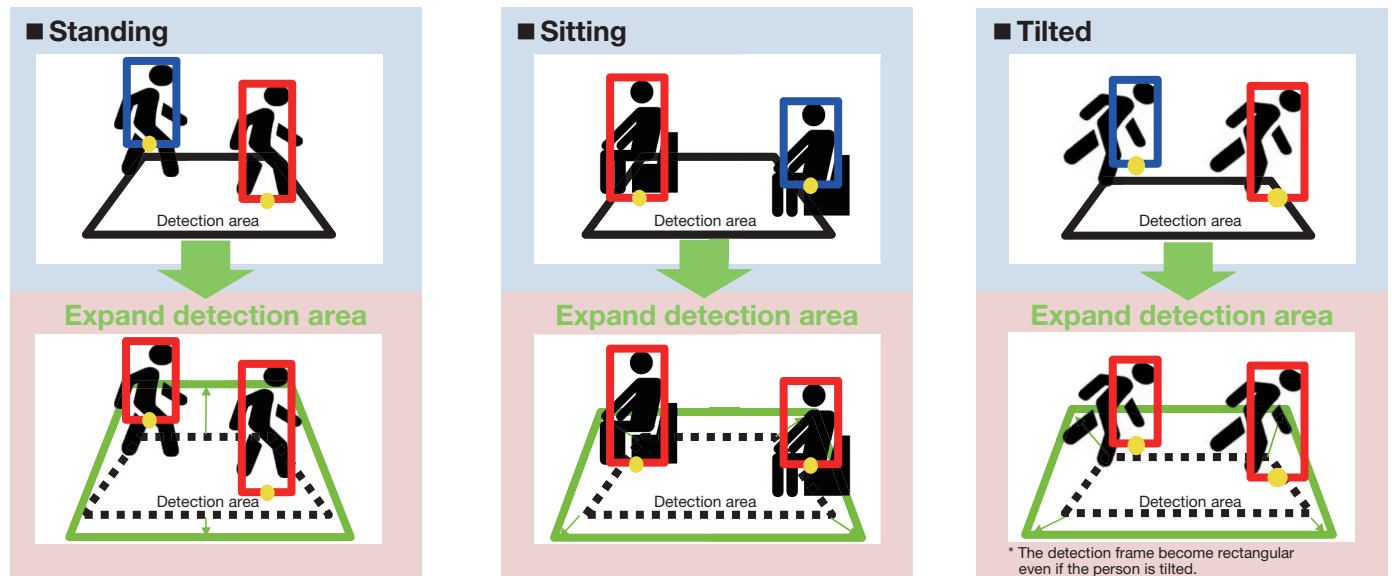
Click it to enable the schedule setting.

Important

- This product's setting screen cannot be opened if the camera's operating schedule is set to Off.

About the detection frame

Please set a larger detection area since the display of the detection frame changes with the state of the person. The position of the detection frame is the intersection of the lines that connect the center of the people detection frame, the center of the image, and the detection frame. Please set the detection area so that the position of this detection frame falls within the detection area.

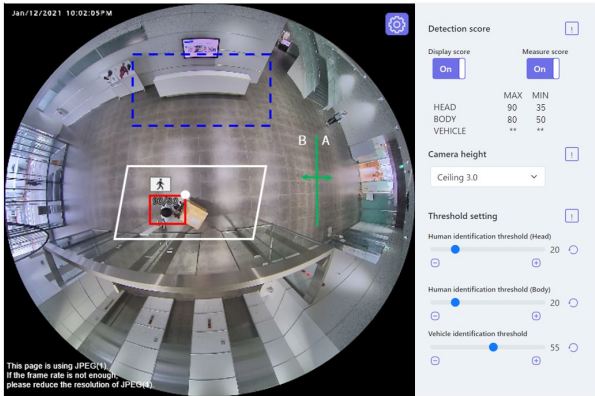


* The detection frame inside the detection area is shown in "red", and the detection frame outside the detection area is shown in "blue".

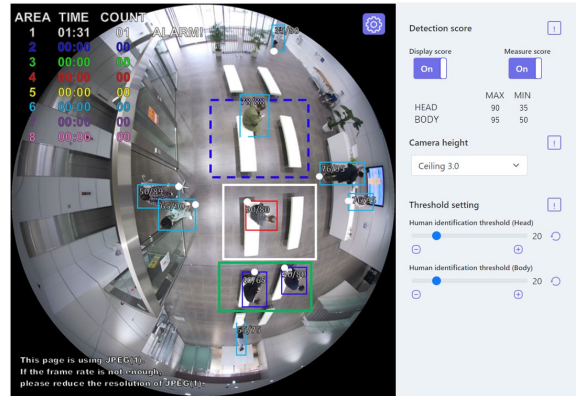
Demo screen

AI-VMD, Cross Line Counting, Heat Map, Area Counting/Occupancy Detection functions each have a demo screen display button, and the demo screen can be displayed by clicking it.

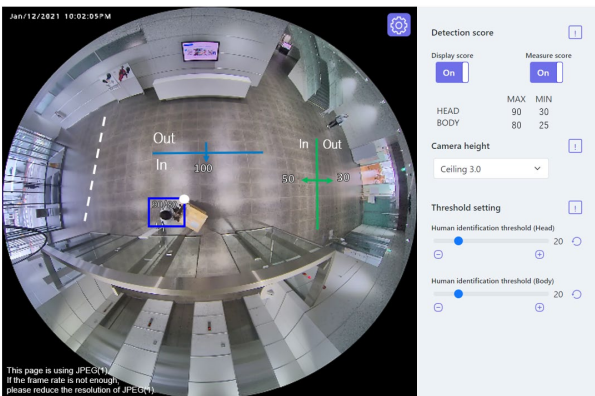
AI-VMD



Area counting/Occupancy Detection



Cross Line Counting



[Detection area]

The set detection area is displayed in color.

- Area 1: White; Area 2: Blue; Area 3: Green; Area 4: Red;
- Area 5: Yellow; Area 6: Light blue; Area 7: Purple; Area 8: Pink

Solid line: Line set to "On"

Dashed line: Line set to "Off"

[Detection area]

The set detection area is displayed in color.

- Area 1: White; Area 2: Blue; Area 3: Green; Area 4: Red;
- Area 5: Yellow; Area 6: Light blue; Area 7: Purple; Area 8: Pink

Solid line: Line set to "On"

Dashed line: Line set to "Off"

[Direction label]

Displays the direction labels for AI-VMD (Cross Line Detection) and Cross Line Counting (Cross Line Detection: A, B; Cross Line Counting: In, Out).

[Detection frame]

A frame is displayed when a target object is detected.

Red frame: Displays the objects in the area where the alarm occurred and objects crossing the line in the set directions.

Blue frame: (When using AI-VMD and Cross Line Counting): Displays the detected object.

Demo screen (continued)

(When using Area Counting/Occupancy Detection) Displays the objects in the area and objects moving in directions other than the set directions.

Light blue frame (Area Counting/Occupancy Detection only): Displays the people who are not in any area.

[Area status (AREA 1~AREA 8) (Area Counting/Occupancy Detection only)]

TIME: Displays the time (timer) when the set number of people is exceeded.

COUNT: Displays the number of people detected.

ALARM!: Displayed when an alarm is detected.

[White dots in detection frame]

The white dot in the person detection frame shows the position of the person's feet.

[Number of counts (Cross Line Counting only)]

The count for persons counted a set direction is displayed in a color that corresponds to the line being counted.

Line 1: White; Line 2: Blue; Line 3: Green; Line 4: Red;

Line 5: Yellow; Line 6: Light blue; Line 7: Purple; Line 8: Pink

[Settings] button

Click to display the [Display score] and [Measure score] toggle switch and threshold settings.

[Display score]

When the switch is "On", the head score (left) and whole body score (right) are displayed in the upper left corner of the detection frame.

If the detection score is below the threshold, "***" is displayed.

[Measure score]

When set to "On", measurement of the maximum and minimum detection score (head and whole body) is started and the measurement result (MAX/MIN) will be displayed on the demo screen. When set to "Off," measurement is stopped.

[Icon]

When the Display score is "On", the icon of the detection object is displayed on the upper left of the detection frame.

Human: , Vehicle: 

Note

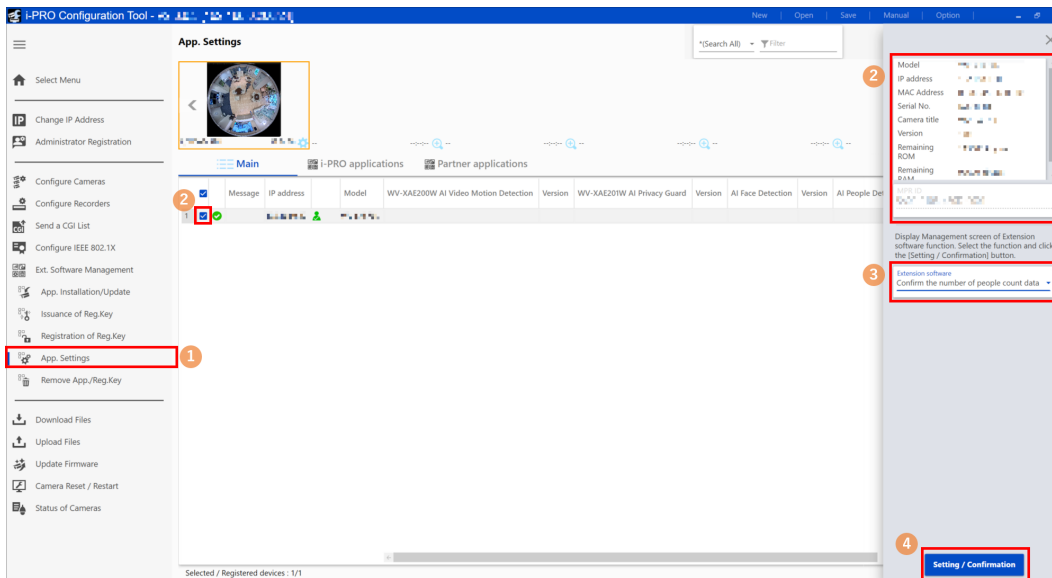
- Please use Mozilla Firefox, Google™ Chrome™ or Microsoft Edge to display the demo screen. Internet Explorer is not supported.
 - The demo screen can be displayed on only one browser. It does not support simultaneous access by multiple browsers.
It also does not support a simultaneous display of demo screen for AI-VMD/Cross Line Counting/Area Counting/Occupancy detection.
 - If the data encryption is set to "On", the demo screen image will not be displayed.
 - The demo screen does not support HTTPS connection.
 - When used simultaneously with other extension software functions, the position of the person may be significantly misaligned with the detection frame on the demo screen.
 - The demo screen is for demo purposes, thus not recommended for actual operation.
 - If Display score is set to "Off", Measure score cannot be set to "On".
-

Aggregation function

Number of people count data confirmation software

This chapter describes the ICT Extension software (Number of people count data confirmation software) that acquires and aggregates the count data based on the Cross Line Counting and the Area Counting of this product. The number of people count data confirmation software is based on the assumption that this product is registered in the camera before use.

1. Open the Setting/Confirmation screen



- (1) Select the "App.Settings" sub-menu.
- (2) Check the checkbox of the camera for which you want to acquire data, and confirm that the information such as the model number and the MPR ID are displayed.
- (3) Select "Confirm the number of people count data" in "Extension software".
- (4) Click [Setting/Confirmation] to open the setting screen of the number of people count data confirmation software.

Note

- The Setting/Confirmation screen can be opened only for cameras with this product already installed.
- When using the aggregation function, set "Measurement result saving interval" in the common setting to 1 hour.

Aggregation function (continued)

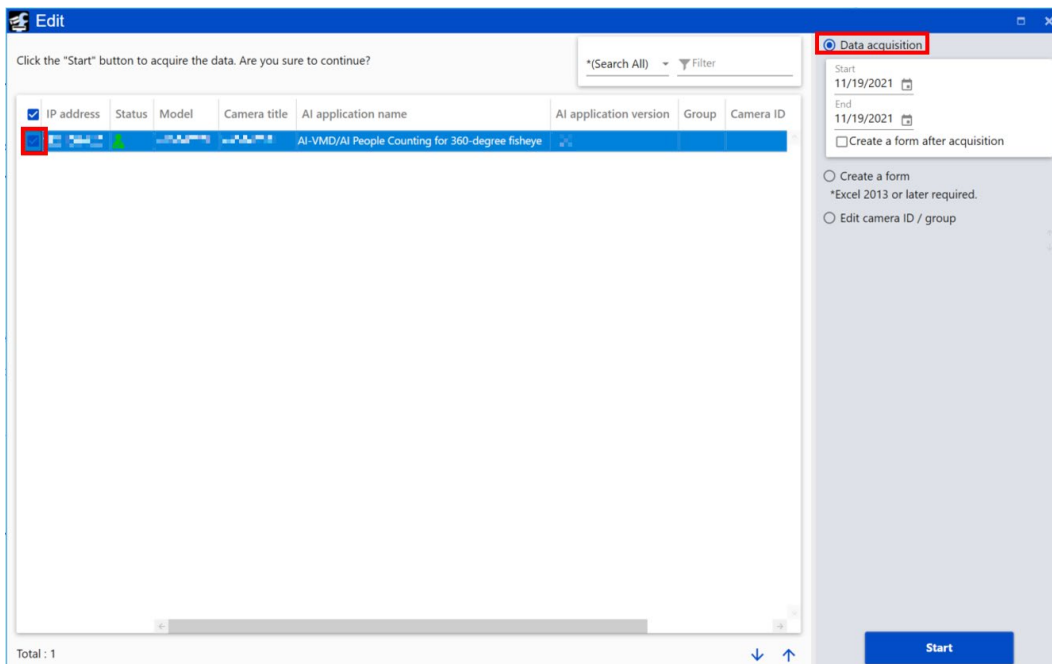
2. Acquire and aggregate the count data

The number of people count data confirmation software can perform the following three operations on the cameras in which this product is installed.

Data acquisition (☞ page 46)

Create a form (☞ page 47)

Edit camera ID / group (☞ page 49)



Data acquisition

Acquire the number of people count data from the camera. Check the checkbox of the target camera and select "Data acquisition" to open the data acquisition setting screen.

Start

Set the start date of the period for which you want to acquire data.

End

Set the end date of the period for which you want to acquire data.

Create a form after acquisition

If you check the checkbox, the form will be output after the data acquisition starts. For more information about the form output, refer to "Create a form (☞ page 46)".

Default setting: Unchecked

[Start] button

When the [Start] button is clicked, the progress screen will be displayed and you can confirm that the data acquisition is completed successfully.

<Process progress window - Result>

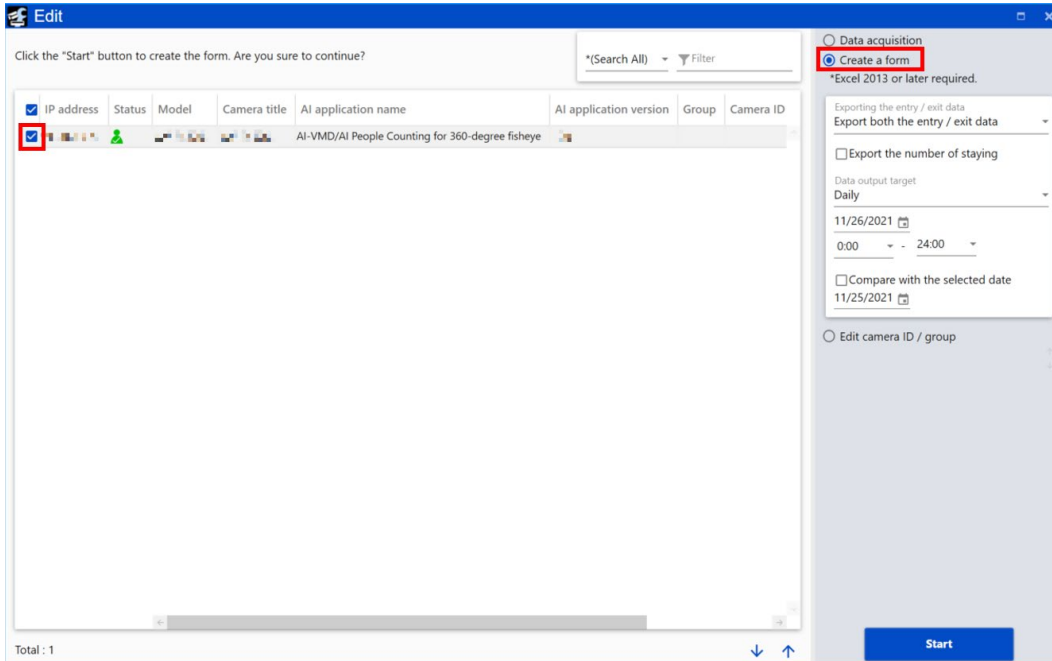
- ✔ : Success
- ✘ : Failure
- ▶ : In progress

※When the result is "Failure", check the error message.

Aggregation function (continued)

Create a form

The aggregation data of the number of people count data acquired from the camera by "Data acquisition" is expressed in tables and graphs and saved in Excel format. Check the checkbox of the target camera and select "Create a form" to open the form creation setting screen.



Exporting the entry / exit data

In the target detection line, select to output the number of people count in the entry direction or in the exit direction on the form.

Export both the entry / exit data, Export the entry data only, Export the exit data only

Default setting: Export both the entry / exit data

Export the number of staying

If the checkbox is checked, the number of people staying will be output.

Default setting: Unchecked

Note

- The settings of "Exporting the entry / exit data" and "Export the number of staying" do not apply to the form output of the count data of Area Counting.
- In the Cross Line Counting, the total value of the count data will be output as a form when multiple lines are set. To output only the count data for line 1, edit the <MultiLine> tag in the following file. However, it needs to be rewritten before starting iCT.

C:\Users\Windows user\Desktop\i-PRO Configuration Tool\#PeopleCount\Storage\Project000
KazoolDevData.xml

Default value: <MultiLine> 1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1 </MultiLine>

When outputting only the count data of line 1: <MultiLine> 1,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0 </MultiLine>

Data output target

Select from a daily report (in hourly units) or a monthly report (in daily units) for the specified year, month, and day, and output the file.

Default setting: (output unit) Daily, (Year/Month/Day/Hour) from 0:00 to 24:00 on the setting day

Aggregation function (continued)

Compare with the selected date




When the checkbox is checked, the data to be compared can be output at the same time.

Default setting: Unchecked

[Start] button

When the [Start] button is clicked, the progress screen is displayed to confirm that the form output is completed successfully.

<Process progress window - Result>

-  : Success
-  : Failure
-  : In progress

※When the result is "Failure", check the error message.

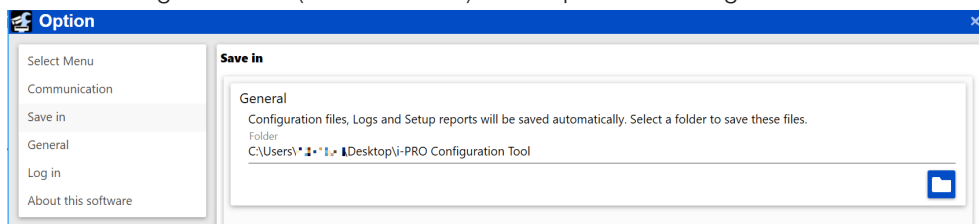
The name and contents of the form sheet are as follows.

Sheet name	Contents
Total	The total group of Cross Line Counting is recorded. A graph is displayed below the table.
Group name	The total number of Cross Line Counting for each camera ID is recorded. A graph is displayed below the table.
Area_Total	The total group of Area Counting is recorded. A graph is displayed below the table.
Area_(group name)	The total number of Area Counting for each camera ID is recorded. A graph is displayed below the table.
Err	The error details that have occurred for each camera in each time period are described in the top sheet.

Note

- The location where the data is saved can be specified in the [Save in] screen of [Option].

Default setting: C:\Users\Windows user\Desktop\i-PRO Configuration Tool



- The output form is saved in the "#PeopleCount\Report" folder directly under the data storage location specified in the [Save in] screen of [Option].

Default setting: C:\Users\Windows user\Desktop\i-PRO Configuration Tool\PeopleCount\Report

* File name (for daily report)

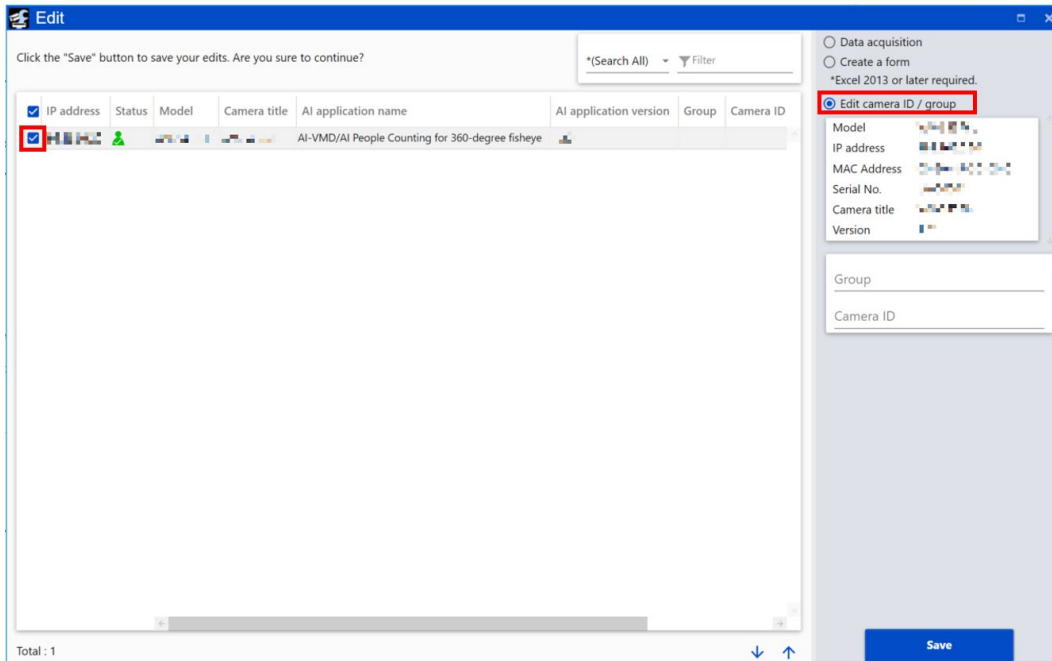
yyyyMMdd_HHmmss_Result_PeopleCount.xlsm

("dd" will be replaced with "_" for monthly report)

Aggregation function (continued)

Edit camera ID / group

Editing the camera ID / group will change the camera ID and group name of the registered camera. Check the checkbox of the target camera and select "Edit camera ID / group" to open the editing screen of camera ID / group.



Group

Set the group name of the target camera.

Default setting: Blank

Camera ID

Set the camera ID of the target camera.

Default setting: Blank

[Save] button

Click the [Save] button to save settings.

Aggregation function (continued)

Example of form format

When a form is output with the camera connected, "group" set as the group and "cameraID" set as the camera ID, it will be output as shown below.

[Total sheet] Example of table

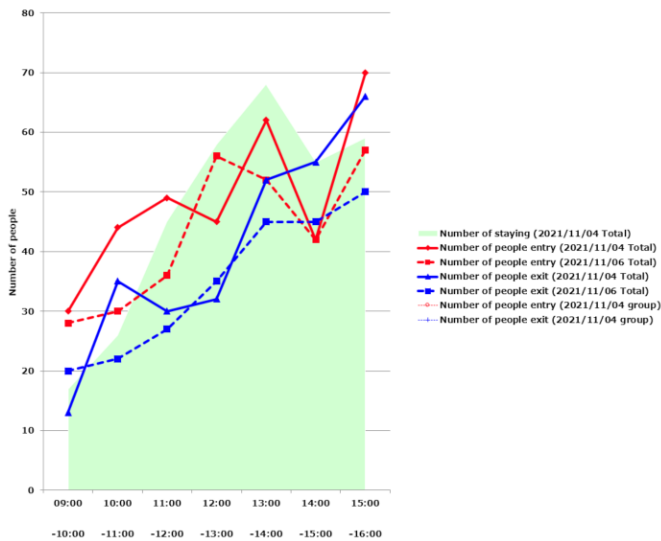
2021/11/04 People count result(Daily report)												
Group	People count type	Year/Month/Day	Total	Increase/Decrease ratio	Composition ratio	09:00-10:00	10:00-11:00	11:00-12:00	12:00-13:00	13:00-14:00	14:00-15:00	15:00-16:00
Total	Number of people entry	2021/11/04	342	113%	100%	30	44	49	45	62	42	70
		2021/11/06	301		100%	28	30	36	56	52	42	57
	Number of people exit	2021/11/04	283	115%	100%	13	35	30	32	52	55	66
		2021/11/06	244		100%	20	22	27	35	45	45	50
group	Number of people staying	2021/11/04	-	-	-	17	26	45	58	68	55	59
		2021/11/06	-	-	-	8	16	25	46	53	50	57
	Number of people entry	2021/11/04	342	113%	100%	30	44	49	45	62	42	70
		2021/11/06	301		100%	28	30	36	56	52	42	57
Number of people exit	2021/11/04	283	115%	100%	13	35	30	32	52	55	66	
	2021/11/06	244		100%	20	22	27	35	45	45	50	

[Area_group sheet] Example of table

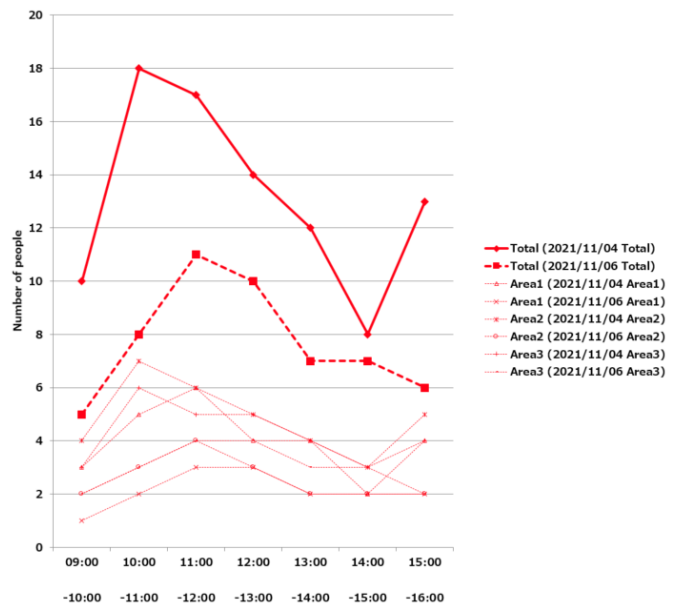
The number of Area Counting will output the average count value per hour.

2021/11/04 People count result(Daily report)									
Camera ID	Area	Year/Month/Day	09:00-10:00	10:00-11:00	11:00-12:00	12:00-13:00	13:00-14:00	14:00-15:00	15:00-16:00
Total		2021/11/04	10	18	17	14	12	8	13
		2021/11/06	5	8	11	10	7	7	6
cameraID	Area1	2021/11/04	3	5	6	4	4	2	4
		2021/11/06	1	2	3	3	2	2	2
	Area2	2021/11/04	4	7	6	5	4	3	5
		2021/11/06	2	3	4	3	2	2	2
	Area3	2021/11/04	3	6	5	5	4	3	4
		2021/11/06	2	3	4	4	3	3	2

[Total sheet] Example of graph



[Area_group sheet] Example of graph



Example of Err sheet

If the data for the specified period does not exist in the camera, or if the camera cannot be connected, "File not found." will be output in the "Error details".

Number of people count data acquisition error					
Time	IP address	Camera ID	Group	Travelling direction	Error details
2021/11/2 23:00	192.168.0.20:80	cameraID	group	Exit	File not found.
2021/11/4 23:00	192.168.0.20:80	cameraID	group	Exit	File not found.

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