Integrated Software Operation Manual (Advanced Auto Framing Function)

Contents

Description in this manual

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About the description in this manual

• The illustrations and screenshots within this manual may differ from actual items.
• In this manual, a personal computer is described as “PC”.
• “This software” means the Media Production Suite software.
• “This function” means the Advanced Auto Framing function.

Terms Used in this Manual

Definitions of terminology used in this manual are provided below.

• Face tracking focus

This is a function that makes a camera's auto focus track the face of the target when using auto framing.

• Group shot

This refers to the operation for capturing an image where all subjects are included within the camera's field of view.

• Target frame

This is a function that saves the composition when capturing a subject using auto framing as a preset.

• Framing

This refers to the operation for capturing an image of a subject with a PTZ camera using auto framing.

• Framing camera

This refers to a PTZ camera that captures images of a subject using auto framing.

• Reference camera

This refers to a PTZ camera that captures a wide-angle view of the whole environment.

• Reference camera linking

This is a function where a reference camera that captures a wide-angle view of the whole environment links with a framing camera that captures images of a subject using auto framing.

About the Advanced Auto Framing Function

Description of the Function

The Advanced Auto Framing function is a plugin (available for a fee) that enables linking with a PTZ camera to perform high-definition auto framing. Its main features are as described below.

1. High-definition auto framing that reproduces a composition
   This feature enables linking with a PTZ camera to perform auto framing while reproducing the composition set by the user with high accuracy. As a result of advanced human detection and camera control, scenes in which the framing target is moving can also be captured at a stable angle, and high-quality camera work, such as maintaining a steady headroom can be performed.

2. Detailed framing settings can be made
   This feature enables setting in detail the composition at the time of performing framing (position and size of the framing target), and also the camera moving speed and sensitivity.

3. Framing settings can be registered (Target Frame function)
   Multiple number of set compositions, and camera moving speeds and sensitivities can be stored as presets and recalled at any timing.

4. Group shots of multiple people are supported
   When there are multiple subjects in the camera image, it is possible to select multiple framing targets from among the subjects and perform framing so that all the selected targets fit in the camera image.

5. Multiple cameras can be controlled simultaneously
   Framing control can be performed simultaneously on multiple PTZ cameras.
   The number of PTZ cameras that can be used simultaneously varies depending on the PC performance.

6. Face tracking auto-focus is possible
   If a supported PTZ camera is used, auto-focus can be made to track the face for framing.

7. Operations interlinked with the remote camera controller can be performed
   By using this function together with the Panasonic remote camera controller, it allows for interlinked operations such as stopping framing control when the PTZ camera is operated by the remote camera controller and synchronizing

camera selection on the GUI of this function and the remote camera controller.

8. The subject can be detected using facial recognition
   Using the facial recognition function, you can capture auto framing images with only a specific person as the subject
   Facial recognition processing is performed by the computer on which this software runs. Information from facial recognition is never sent to external parties.

9. Interlinked image capture using multiple PTZ cameras is possible
   This function enables the capturing of images with reference camera linking, whereby a reference camera that captures wide-angle view images links with a framing camera that performs auto framing. For details on reference camera linking, refer to "Auto Framing Operation (Multi-screen)".

<NOTE>

- Since this function uses image processing, false detections of tracking targets may occur.
  Use this function in an environment where an operator can perform correction tasks for false detections.

About features available to use free of charge

This function is a plugin that must be purchased before use, but if you use an AW-UE160/UE163 as a PTZ camera, some features are available to use for free.
Henceforth in this manual, the function with some features that can be used free of charge is referred to as the AW-UE160 Auto Framing function, and the full feature version that can be used with a valid paid license is referred to as the Advanced Auto Framing function.

The differences between the functions are as set out below.

		AW-UE160 Auto Framing function	Advanced Auto Framing function
Operational Requirements	Supported PTZ cameras	AW-UE160/UE163 only	All supported cameras (*)
	PC with a GPU	Not required	Required (*)
Supported functions	Reference camera linking		○
	Facial recognition		○
	Max. target frames	3	20
Accessible GUI screens	Single screen	○	○
	Multi-screen		○
	Setup screen		○

*For supported PTZ camera models and PC requirements, refer to "Operational Requirements".

Operational Requirements

This function requires the following environment.

■ PC

・ OS *1

Windows Server 2022

Windows 11

Windows 10 64bit (Version 21H2 or later)

・ Hardware (when using AW-UE160 Auto Framing function)

CPU: Intel Core 7th generation (Kaby Lake) or later

Memory: 8 GB or more

Display: 1920 x 1080 or higher

Storage: 2 GB or more free space

In the above environment, the auto framing operation can be performed on 4 or more cameras.

There is no limit to the number of cameras that can be used with the software, but we recommend up to 10 cameras.

• Hardware (when using Advanced Auto Framing function)

CPU:

When the number of cameras simultaneously operating is up to 4: *2

4 or more cores, the PassMark score of 7,000 or higher

- Recommended CPU

Intel Core i7-11800H

Intel Core i7 13700/14700

Intel Core i9 13900/14900

When the number of cameras simultaneously operating is up to 6:

4 or more cores,

2 CPUs with a PassMark score of 7,000 or higher (Dual CPU)

Or 1 CPU with the PassMark score of 18,000 or higher

- Recommended CPU

Intel Core i7-11800H

Intel Core i7 13700/14700

Intel Core i9 13900/14900

GPU: NVIDIA GPUs with Ampere, Ada Lovelace architecture *3 *4 *5

Number of cameras that can be simultaneously operated for each GPU model *6

Number of cameras that can be simultaneously operated	NVIDIA GPU architecture generation		
	Ampere	Ada Lovelace	Blackwell
1	GeForce RTX3050 or higher RTX A2000 or higher	GeForce RTX4050 or higher RTX2000 Ada or higher	GeForce RTX5050 or higher RTX PRO2000 Blackwell or higher
2	GeForce RTX3050 or higher RTX A2000 or higher	GeForce RTX4050 or higher RTX2000 Ada or higher	GeForce RTX5050 or higher RTX PRO2000 Blackwell or higher
4	GeForce RTX3060 or higher RTX A4000 or higher	GeForce RTX4050 or higher RTX2000 Ada or higher	GeForce RTX5050 or higher RTX PRO2000 Blackwell or higher
6	GeForce RTX3070 or higher RTX A4500 or higher	GeForce RTX4070 or higher RTX4500 Ada or higher	GeForce RTX5070 or higher RTX PRO3000 Blackwell or higher

Memory: 16 GB or more

Display: 1920 x 1080 or larger

Storage: 2 GB or more free space

・ Software

Web browser: Microsoft Edge, Google Chrome

<NOTE>

*1: Ensure that you use this feature with the Windows OS installed to the C drive of the PC.

*2: The number of cameras that can be operated simultaneously refers to the number of cameras that perform auto framing (framing cameras) without using their AW-UE160 auto framing function.

*3 In order to use the function, it is necessary to update to the latest GPU driver version compatible with the installed GPU from the official NVIDIA website.

*4: NVIDIA GPUs with Turing architecture or earlier are not guaranteed to work.

*5: The required GPU models are the minimum specifications necessary to run the function. Especially when a large number of cameras are operating simultaneously, the higher the GPU model listed in the table, the better the framing performance.

*6: Six framing cameras can be operated simultaneously, even with two GPUs that each support up to four cameras.

■ Client (Browse terminal)

・ OS

Windows 11

Windows 10 64bit (Version 21H2 or later)

macOS 13 (Ventura) or later

iPadOS 16 or later

・ Hardware

Display: 1920 x 1080 or higher (on other than iPad)

・ Software

Web browser: Microsoft Edge, Google Chrome

■ PTZ camera

The PTZ cameras that can be used with this function are set out below (as of June 2025)

The face tracking auto-focus function can only be used with the AW-UE160/163.

	AW-UE160 Auto Framing function	**Advanced Auto Framing function**	**Face tracking auto-focus support**
AW-UE160/163	○ (firmware version 2.01 or higher required*)		○
AW-UE150A/148		○	
AW-UE150		○	
AW-UE100		○	
AW-UE80/83		○	
AW-HE145		○	
AW-UN145		○	
AW-UR100		○	
AW-UE50/53/40/43/30		As Reference Camera	

*If the firmware version of the PTZ camera is earlier than the version specified above, it is possible to update the firmware with the Easy IP Setup Tool Plus of the Device Manager function.

If the PC is not connected to the Internet, download the latest firmware from the following website and use the above

Easy IP Setup Tool Plus.

https://eww.pass.panasonic.co.jp/p2ui/guest/TopLogin.do?lang=en

■ Remote camera controller

The following remote camera controllers can be linked to this function.

(As of January 2025)

- AW-RP150
- AW-RP60　SYSTEM VERSION Ver 3.05-00-0.00 or higher required

Handling of personal information registered on this function

Our company does not collect, store, or share any personal information, such as individual facial photos, registered on this function within our organization.

Any information registered on this function is stored only in the environment where the function is installed (PC, server) and is not saved elsewhere.

About the paid license

Procedure for Using this Function

When using this function, one of the following procedures must be performed.

- Trial start procedure

  This is the procedure for starting the free trial.

  After completing the procedure, you can use the function for free for 30 days.

  To continue using the functions after the trial period, you need to purchase a paid license (key code) and perform activation.

- Activation procedure

  This is the procedure for registering a paid license (key code) on the license server to enable use of the function.

  The period of validity (the period for which the function can be used) and the number of framing cameras that can be used for image capture with auto framing differs depending on the license. For details, refer to the "Types of paid license" item.

The procedure for starting the trial and activation is performed by the Information function of this software.

With the Information function, you can:

- Start a free trial
- Activate/deactivate a paid license
- Check the status of a paid license
- Install data for implementation
- Update data for implementation

Types of paid license

The types of paid license for this function are set out below. The period of validity (the period for which the function can be used) and the number of framing cameras that can be used for image capture with auto framing differs depending on the license.

License model	Period of validity	No. of cameras that can be used
AW-SF501G/AW-SF501Z	Unlimited	1 camera
AW-SF501WZ	7 days	1 camera
AW-SF501MZ	30 days	1 camera
AW-SF503G/AW-SF503Z	Unlimited	3 cameras
AW-SF503WZ	7 days	3 cameras

AW-SF503MZ	30 days	3 cameras

About the validity period of licenses

Licenses with a period of validity less than unlimited expire a set number of days after being activated.

Please note that the number of days of the period of validity is counted from the day on which the license is activated, not the number of days that you use this function.

If your license becomes invalid, please activate another license. You can also extend the period for which you can use the function by buying another license before your license expires. For details, refer to "Activating the License" and "Apply for a license extension".

About the number of cameras that can be used

You can activate multiple paid licenses for this function. When you activate multiple licenses, the number of cameras that you can use with this paid function increases proportionately.

Example: 1. Activating one license each for an AW-SF501G and AW-SF503G

→ The number of cameras that can be used is 1 + 3 = 4.

2. Activating one additional license for an AW-SF501WZ in the state in 1.

→ The number of cameras that can be used is 1 + 3 + 1 = 5.

3. Activating one more additional license for an AW-SF501WZ in the state in 2.

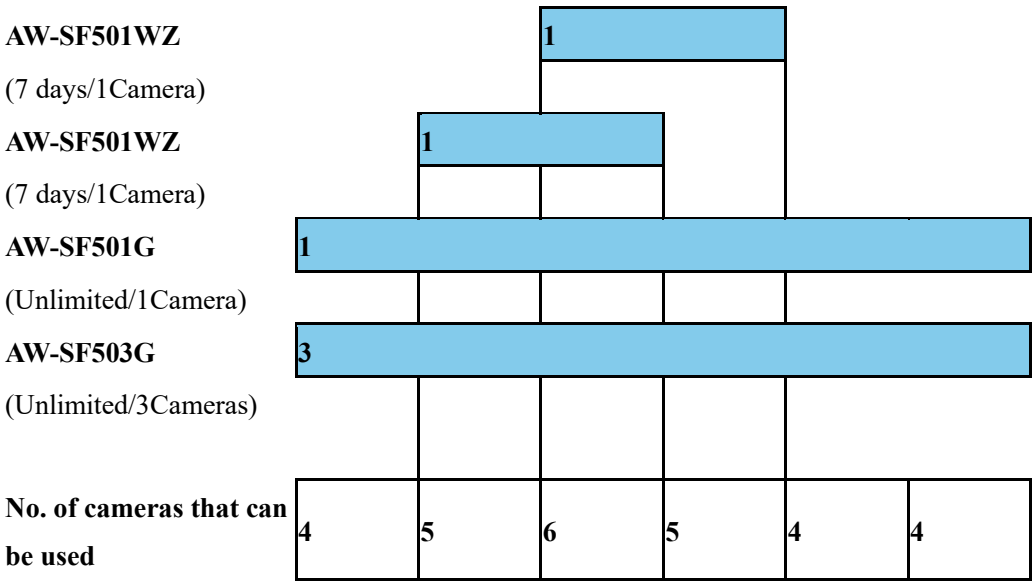
→ The number of cameras that can be used is 1 + 3 + 1 + 1 = 6.

4. Seven days after the activation in 2.

→ The license for the AW-SF501WZ in 2. expires, so the number of cameras that can be used returns to a total of 1 + 3 + 1 = 5.

5. Seven days after the activation in 3.

→ The license for the AW-SF501WZ in 3. expires, so the number of cameras that can be used returns to a total of 1 + 3 = 4.



Consumption of paid licenses

When the auto framing function of a camera is switched on with conditions that will use up the license, the license for one camera will be used. When the auto framing function is switched off, the license will return to an unused state.
Operations that use up paid licenses are set out below.

<table>
<tr><th rowspan="2">GUI screens</th><th rowspan="2">Reference cameras</th><th colspan="3">Framing cameras</th></tr>
<tr><th>AW-UE160/163 (When using the camera's built-in auto framing)</th><th>AW-UE160/163 (When using the PC's GPU)</th><th>Cameras other than AW-UE160/163</th></tr>
<tr><td>Single screen</td><td>-</td><td>Does not use up license (Facial recognition not available)</td><td colspan="2">Uses up license (Facial recognition available)</td></tr>
<tr><td>Allocated to multi-screen</td><td>Does not use up license</td><td colspan="3">Uses up license (Facial recognition available)</td></tr>
</table>

- Reference cameras do not use up the license.
- When the camera is an AW-UE160/163 on a single screen and the camera's built-in auto framing function is used, the license is not used up. Facial recognition and other such functions are not available.

<NOTE>

- The license usage status is displayed in the top right corner of the function screen in the format "Used Advanced Auto Framing Plugin Licenses: X / X". The figure on the left side indicates the number of cameras using a license (i.e. the auto framing function is on), and the figure on the right indicates the number of cameras that can be used (i.e. the total number of activated licenses).

Maximum number of framing cameras that can operate simultaneously

This function can perform auto framing operation on multiple framing cameras. However, there is a limit to the number of framing cameras that can operate simultaneously.
The maximum number of framing cameras that can be operated simultaneously is determined by whichever is the smaller of A and B below.

A: The maximum number of simultaneously operating cameras for this function: 6 is the upper limit.
B: B: The limit imposed by the license: The following number is the upper limit depending on the license.
During a trial period: 3 cameras
With a valid paid license: Total no. of cameras that can be used with a valid license

If you attempt to turn the framing camera function on in excess of the maximum number of cameras that can be used, a warning icon is displayed. Please turn the auto framing function of one of the framing cameras in operation off.

<NOTE>

- There is no limit on the number of cameras that can be used for the AW-UE160 Auto Framing function.

Starting the Free Trial

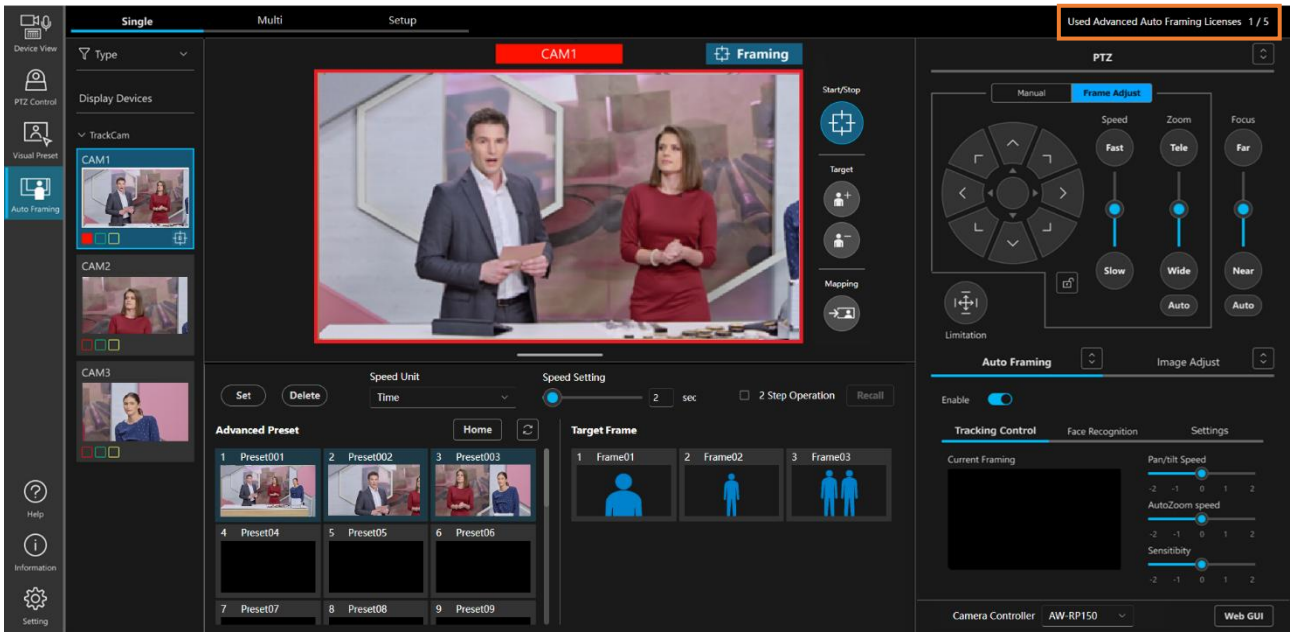
After you perform the procedure for starting the trial, the Advanced Auto Framing function is available at no charge for 30 days.
During the trial period, up to three cameras can be used for auto framing.

For instructions on how to start a trial, please refer to "Manage Paid Plugins" → "Starting the Free Trial" in the Information Function Operating Manual.

Activating the License

This function becomes available after you activate the paid license.
For activation procedures, refer to " Manage Paid Plugins " → "Activating the License" in the Information Function Operating Manual.

When the process completes successfully, the License Status will change to [Activated], and the number on the right side of the Used Advanced Auto Framing Licenses in the top right corner of the [Auto Framing] screen in the function selection area on the left side of the screen will be updated. The number on the left indicates the current number of framing cameras using licenses, and the number on the right indicates the maximum number of framing cameras that can be used (total number of activated licenses).
It takes a maximum of 1 minute for the request to be processed and reflected.



Deactivating the License

If you wish to transfer a license to another PC, you must first deactivate the license on the PC on which the license is currently activated.

For deactivation procedures, refer to " Manage Paid Plugins " → "Deactivating the License" in the Information Function Operating Manual.

Apply for a license extension

If your license has a validity period, you can extend the validity period by carrying out the extension procedure using a different license (key code).

example)

- Extend an AW-SF501WZ (validity period: 7 days) by using another AW-SF501WZ (validity period: 7 days)
  The validity period will be 14 days (7 days + 7 days).
- Extend an AW-SF501WZ (validity period: 7 days) by using AW-SF501MZ (validity period: 30 days)
  The validity period will be 37 days (7 days + 30 days).

<NOTE>

- Licenses with different numbers of usable cameras cannot be used for extension procedures.
  Only the AW-SF501WZ/AW-SF501MZ can be used for extension procedures for the AW-SF501WZ/AW-SF501MZ (number of cameras: 1).
  Similarly, only the AW-SF503WZ/AW-SF503MZ can be used to extend the license for the AW-SF503WZ/AW-SF503MZ (number of cameras: 3).

For the procedure for extension, please refer to " Manage Paid Plugins " → " Apply for a license extension" in the Information Function Operating Manual.

Checking the License Status

The license status can be checked on the Information function screen.

For the procedure, please refer to " Manage Paid Plugins " → " Checking the license status" in the Information Function Operating Manual.

Installation of the plugin data

If the license status is [In Trial] or [Activated] and the plugin data for this function is not installed on your PC, you will need to install the plugin data.

For instructions, please refer to "Manage Paid Plugins" -> "Installation of the plugin data" in the Information Function Operating Manual.

*The PC must be connected to the Internet.

Approximately 2 GB of data is to be downloaded, so it is recommended to perform the procedure in an environment with good connection status.

Update of the plugin data

If the license status is [In Trial] or [Activated] and new plugin data is available on the website, you can update the plugin data from the Information screen.
For instructions, refer to "Manage paid plugins" -> "Updating plugin data" in the Information function operating instructions.

*The PC must be connected to the Internet.

Approximately 2 GB of data is to be downloaded, so it is recommended to perform the procedure in an environment with good connection status.

PC Hardware Settings

About the PC Hardware Settings

Before using this function, make the following settings on the PC on which this software is installed.

- Network connection for PC
- Network adaptor settings for PC

Network connection for PC

When using this plugin, it is recommended to use a wired LAN connection between the PC with the software installed and the PTZ camera/remote camera controller. On a wireless LAN connection, you may experience performance degradation, resulting in issues such as losing the framing target more frequently.

Network adaptor setting for PC

When using this plugin, it is recommended to turn off or disable the power-saving settings on the PC's network adapter. If you use this plugin with power-saving settings enabled, issues such as video interruptions may occur, which can affect the framing performance.

Configure the settings according to the procedure below.

1. Open "Search" from the Start menu of Windows and enter "Device Manager" in the search box.
2. Device Manager will be displayed in the search results. Click it to open the Device Manager.
   (You can also open Device Manager by right-clicking the Windows Start button and selecting Device Manager from the list)
3. Double-click the Network Adapters item in Device Manager. Expand the dropdown list of network adapters.
4. Right-click on the network adapter used by this software, then select Properties from the list to open the network adapter properties screen.
5. Click the [Advanced Setting] tab and change the settings for the following items.
   (1) Set the Power Saving Ethernet property to Off.
   (2) Set the Low Power Mode property to Disabled.
6. Click the [OK] button.

Setting the PTZ Camera

Camera modes in which this function cannot be used

・ When the PTZ camera AW-UE160/163 has the following Format settings, the Auto Framing function Enable switch cannot be turned ON.

・ Format (from the camera's web interface: Setup -> Basic Config -> Format Settings)

1080/119.88p

1080/100p

・ When the PTZ camera AW-UE160/163 has the following Streaming Mode settings, the Auto Framing function Enable switch cannot be turned ON.

Streaming Mode (from the camera's web interface: Setup -> Video over IP Settings)

H.264(UHD)

H.265(UHD)

JPEG(UHD)

RTMP (UHD)

SRT (H.264 UHD)

SRT (H.265 UHD)

NDI|HX V2 (UHD)

Recommended settings

・ If the PTZ camera is used with User auth turned ON, the camera operation may be delayed. To improve this phenomenon, it is recommended to configure the following settings under Setup on the camera's web interface.

User Auth -> Mode -> Wait time mode: Mode2

・ To perform smooth pan/tilt start and stop motion, it is recommended to configure the following settings under Setup on the camera's web interface. (The AW-UE150/HE145 does not have any of the settings below)

Lens -> O.I.S. Mode: O.I.S (PAN/TILT)

Pan/Tilt -> P/T Acceleration: Manual

Rise S-Curve: 0

Fall S-Curve: 0

Rise Acceleration: 128

Fall Acceleration: 128

Automatic setting items

This software automatically changes the following settings on the PTZ camera itself:

- JPEG Settings (from the camera's web interface: Setup -> Video over IP -> JPEG Settings)
  JPEG(1)
    JPEG transmission: On
    Image capture size: 1280x720
    Refresh interval: With NTSC: 30fps, With PAL: 25fps
    Image quality: fine

Automatic setting items when Auto Framing function is enabled

When this function is enabled, the following settings on the PTZ camera are automatically changed:
The following items are automatically configured to optimize the performance of this function.

- Pan/Tilt settings (from the camera's web interface: Setup -> System -> Pan/Tilt Settings)
  Pan/Tilt Speed Mode: Normal
  Speed With Zoom Position: Off

- Lens settings (from the camera's web interface: Setup -> Lens Settings)
  If Zoom Mode is D.Zoom, it will change to i.Zoom.
  i.Zoom and Digital Extender can be used.

- UHD Crop settings (from the camera's web interface: Setup -> UHD Crop Settings)
  UHD Crop -> IP OUT1(H.264/H.265): FULL

- Tracking Data Output settings (from the camera's web interface: Setup -> Tracking Data Output Settings)
  Connection type: IP (UDP) On
  IP out: Client4 On, Client 4 Port: 10160

- Smart Picture Flip settings (from the camera's web interface: Setup -> Pan/Tilt Settings)
  Smart Picture Flip Mode: Off

Preparations

Registering the PTZ Camera

To use this function, you must register the PTZ camera on the Device Manager function screen of this software.
For details on the registration procedure, refer to “Registering a Device” in the operation manual of the Device Manager function.

Screens

Screens used with this function

This function uses the following three screens:

- Device Manager Screen

  This screen is used for adding or deleting a PTZ camera or remote camera controller.

  For more details, please refer to the Device Manager Function User Manual.

- Auto Framing Screen

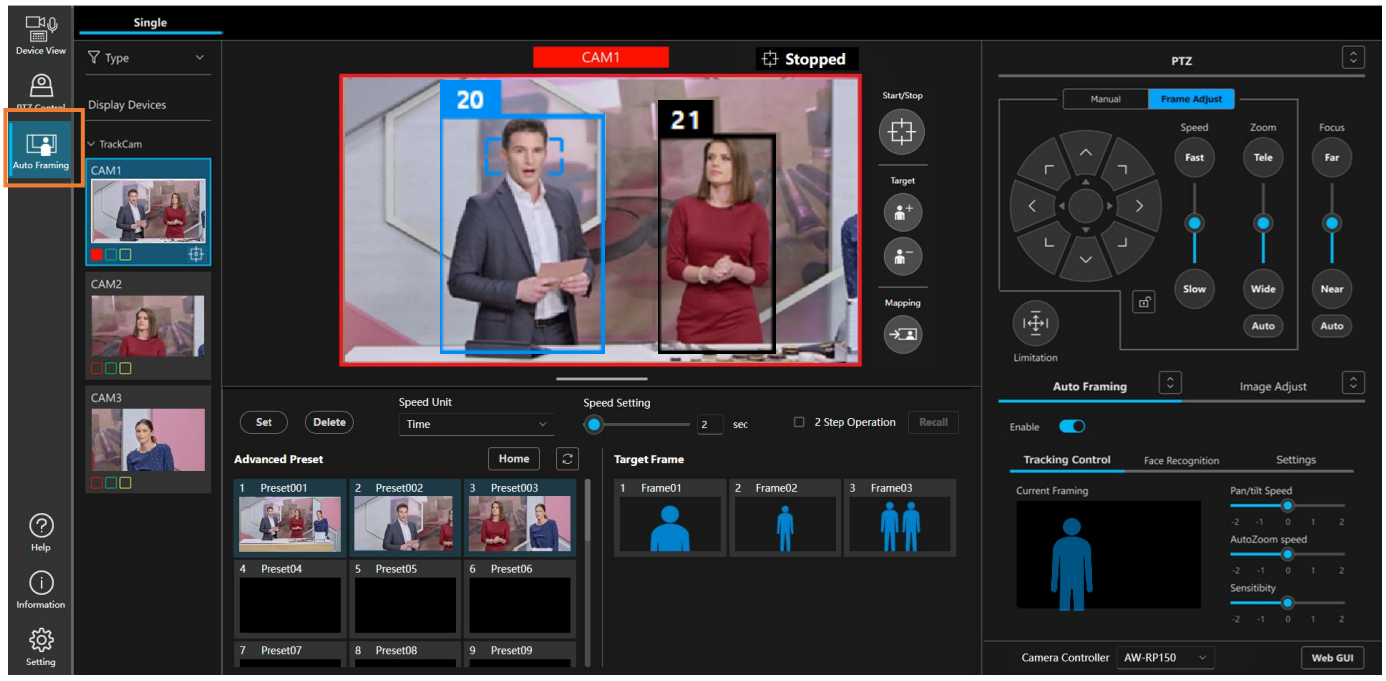
  This screen is used for performing the main operations of this function.

- Setting screen

  This screen is used for setting the port number for functions linked with the remote camera controller.

  For more details, please refer to the Setting Function User Manual.

Displaying the Auto Framing Screen



If you click the Auto Framing button on the left end of the screen, the Auto Framing Screen is displayed.

The Auto Framing screen is composed of the three screens below. Use the tab at the top of the screen to switch screens.

- Single

  This is the screen that is used when performing auto framing operation with a single PTZ camera.

  For details, refer to “Auto Framing Operation (Single-screen)” in this manual.

• Multi

This is the screen that is used when performing auto framing operation with multiple PTZ cameras.

For details, refer to “Auto Framing Operation (Multi-screen)” in this manual.

• Setup

This screen is used for configuring the allocation of cameras used with multi-screen, and for calibration.

For details, refer to “Settings before Using Multi-screen” in this manual.

＜NOTE＞

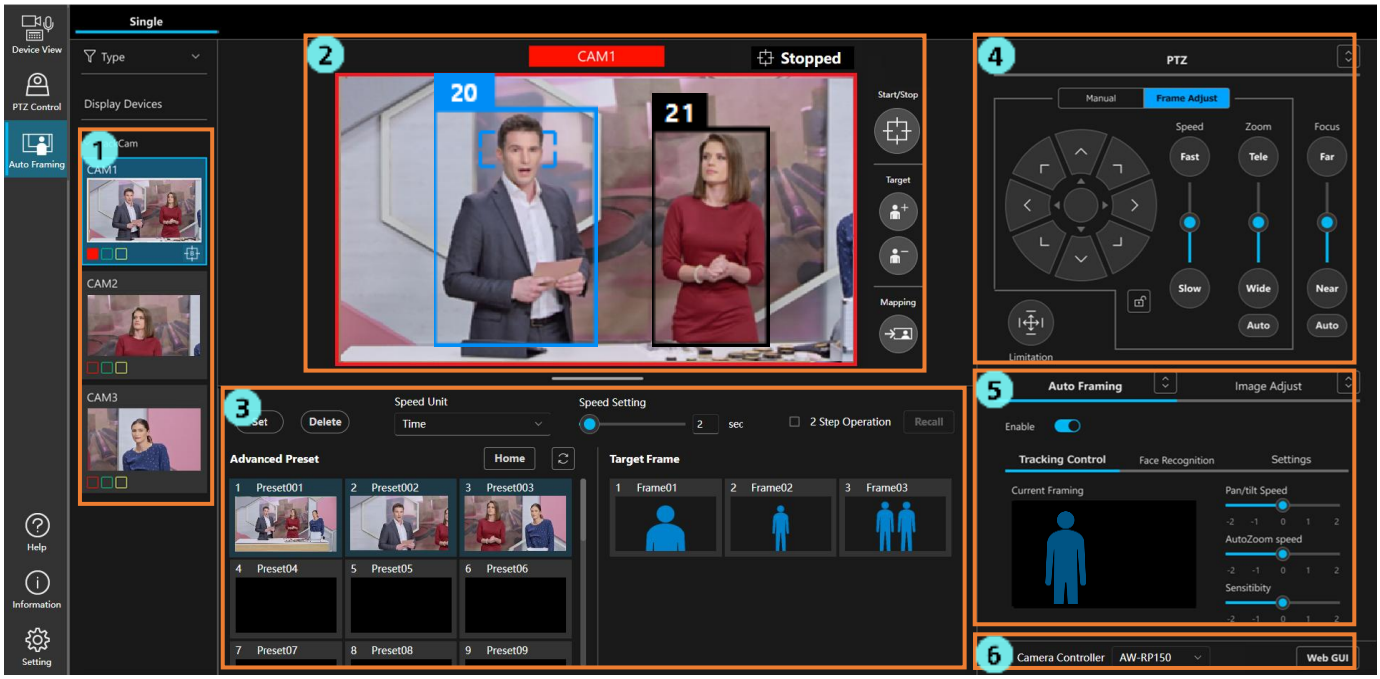
- The Auto Framing button is only shown with a valid paid license or when an AW-UE160/UE163 is connected to this software.
- Do not use the “Duplicate Tab” on the browser. This could result in display problems such as the preset display not being reflected on one side. If multiple screens are required, open a new window.

Auto Framing Operation (Single-screen)

About single screen

The purpose of single screen is to control an individual framing camera without using a reference camera.

Explanation of single screen



1. Camera list display area

   This area displays a list of PTZ cameras registered in this software.

   If you select any PTZ camera, the screen display on the right side changes to the selected camera.

2. Camera image display area

   This area displays an image of the PTZ camera and the detection frame of the subject.

   The auto framing status check and some operations are also performed in this area.

3. Camera preset/Target frame area

   This area is used to manage the camera preset and the target frame (composition of auto framing).

4. PTZ operation area

   This area is used to perform the Pan/Tilt/Zoom operation of the camera, or composition adjustment during framing.

5. Auto Framing/Image Adjust area

The settings of this function are adjusted from the Auto Framing tab, and the camera image quality is adjusted from the Image Adjust tab.

6. Remote camera controller selection/Camera web interface display area

   This area is used to perform target controller selection and to display the camera's web interface during remote camera controller linkage.

Camera list display area

1. Camera name display

   Displays the name of the PTZ camera.

2. Warning display

   Displays an icon when a warning occurs in the PTZ camera or this software.

   Click the icon to view details of the problem.

3. Thumbnail display

   Displays a thumbnail of the image captured by the PTZ camera.

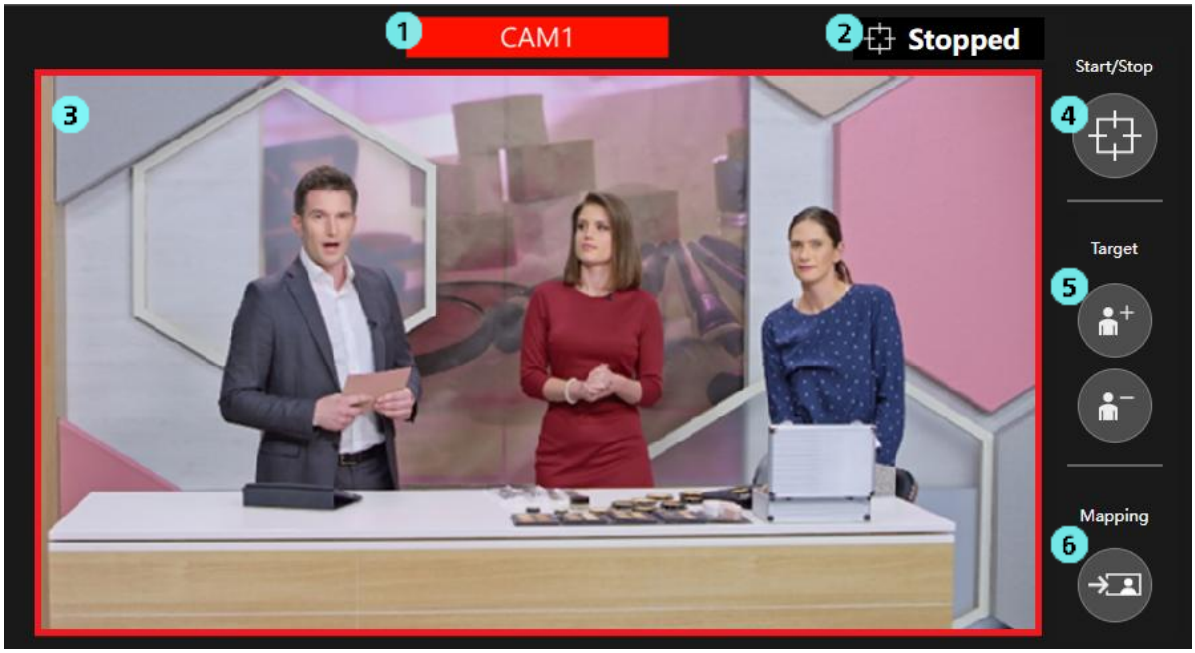
4. Tally lamp status display

   Displays the tally lamp status of the PTZ camera.

5. Auto framing status display

   Displays an icon when the PTZ camera is performing the auto framing operation.

Camera image display area



1. Camera name display

   Displays the name of the PTZ camera.

   If the tally lamp of the camera is ON, the display is in the color of the tally lamp.

   * If multiple tally lamps are ON at the same time, the display is performed in the priority order of red > green > yellow.

2. Auto framing status display

   Displays the operation status of framing.

   For details, refer to "Checking the Auto Framing Status" in this manual.

3. Camera image display

   Displays the image captured by the PTZ camera.

   If the red tally lamp of the camera is ON, a red frame is displayed around the camera image.

4. Toggle button for starting/stopping the auto framing operation

   Press the button to toggle between starting or stopping the auto framing operation.

   For details, refer to "Starting/Stopping the Auto Framing Operation" in this manual.

5. Button for adding/deleting a framing target

   Use this button for adding or deleting a framing target.

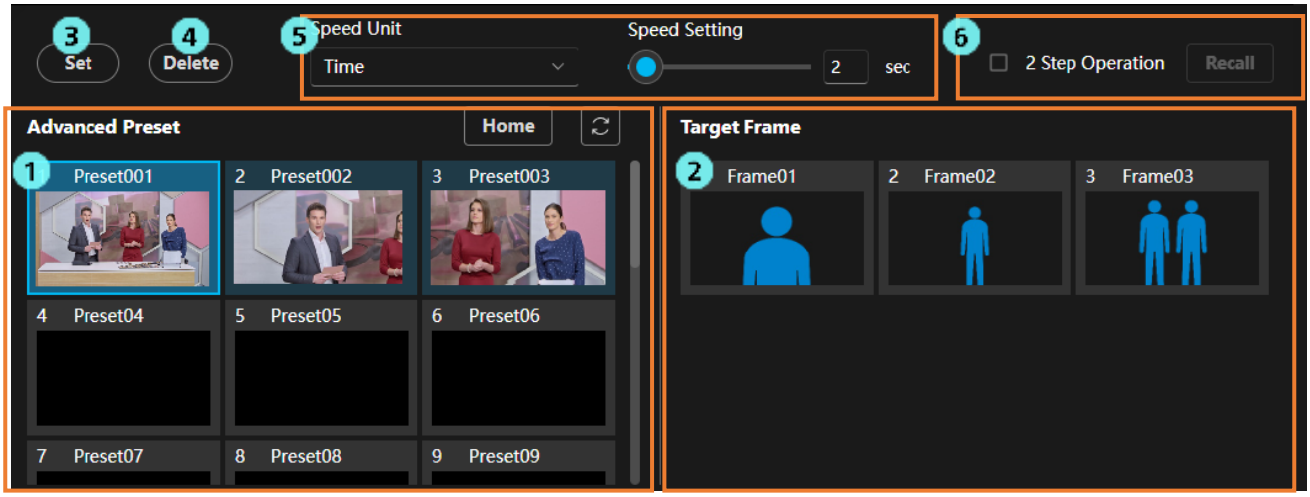
   For details, refer to "Taking a Group Shot of Multiple Human Targets" in this manual.

6. Mapping button

   Press this button to reflect the position and size of the framing target at the time of pressing the button in the current framing settings.

   For details, refer to "Configuring the Framing Settings (Composition and Camera Moving Speed/Sensitivity Settings)" in this manual.

Camera preset/Target frame area



1. Camera preset (Advanced preset) display

   Displays the presets of the PTZ camera.

   If a preset is registered with this function, the framing settings at that time are linked with the preset and saved. The composition of the saved framing settings is displayed as a human silhouette on the thumbnail of the preset.

   For details, refer to "Performing the Camera Preset Operation" in this manual.

   <NOTE>

   - Up to 20 presets are displayed with this function.

2. Target Frame display

   Displays the framing settings (Target Frame) registered as the preset.

   For details, refer to "Performing the Preset Operation for Framing Settings" in this manual.

3. Preset registration button

   Use this button to register a camera preset or target frame.

4. Delete preset button

   Use this button to delete a camera preset or target frame.

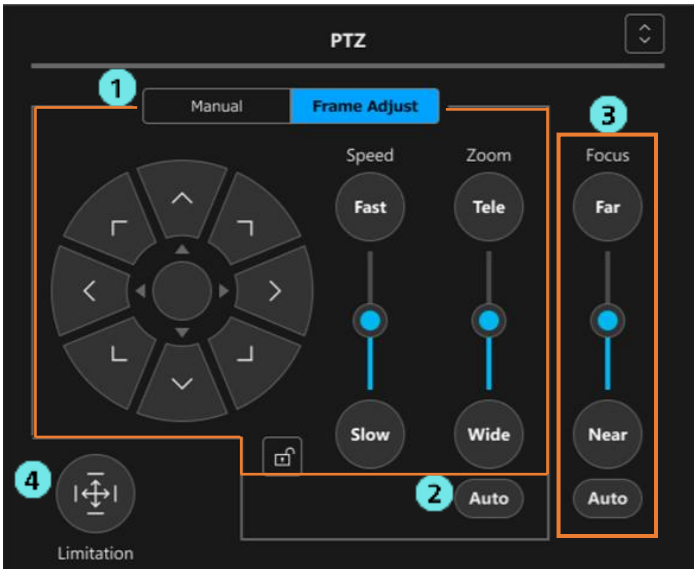
5. Camera moving speed setting area

   Set the camera moving speed when the camera preset or target frame is recalled.

6. 2-step recall operation area

   Use this button to perform 2-step recall of the camera preset or target frame.

PTZ operation area



1. PTZ operation area

   When the Manual tab has been selected, operation is performed in the manual operation mode of the camera, and when the Frame Adjust tab has been selected, operation is performed in the composition adjustment mode during framing.

   For details, refer to "Operating the Camera Manually" and "Configuring the Framing Settings (Composition and Camera Moving Speed/Sensitivity Settings)" in this manual.

2. Auto Zoom ON/OFF button

   Set whether to automatically perform Zoom control at the time of framing.

   For details, refer to "Starting/Stopping the Auto Framing Operation" in this manual.

3. Focus operation area

   This area is used to perform camera focus adjustment and switch ON/OFF Auto Focus.

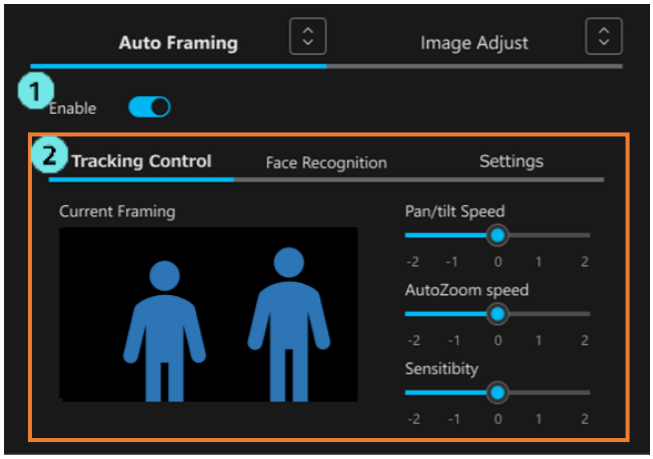
4. Pan/Tilt Limitation operation area

   This area is used for setting the camera movable range.

Auto Framing/Image Adjust area

This area is composed of two screens of the Auto Framing tab and Image Adjust tab.

The operation of the Image Adjust tab screen is similar to the PTZ Control function. Therefore, the operation of the Auto Framing tab screen is described here.



1. Auto framing function Enable switch

   This switch is used to enable the auto framing function of the PTZ camera.

   For details, refer to "Switching ON/OFF the Auto Framing Function" in this manual.

2. Auto Framing operation setting area

   This area is composed of the three tabs of Tracking Control / Face Recognition / Settings.

   - Tracking Control tab

     This tab is used to adjust the composition display and the camera speed and sensitivity during framing.

     For details, refer to "Configuring the Framing Settings (Composition and Camera Moving Speed/Sensitivity Settings)" in this manual.

   - Face Recognition tab

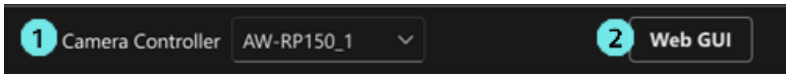
     This tab is for function enhancement in future and does not operate in the current version.

   - Settings tab

     This tab is used to configure the Auto Start Area/Mask Area settings during auto framing and to make detailed settings.

     For more information, refer to "Configuring the Auto Start Area", "Configuring the Mask Area", and "Configuring Detailed Settings" in this manual.

Remote camera controller selection/Camera web interface display area



1. Remote camera controller selection box

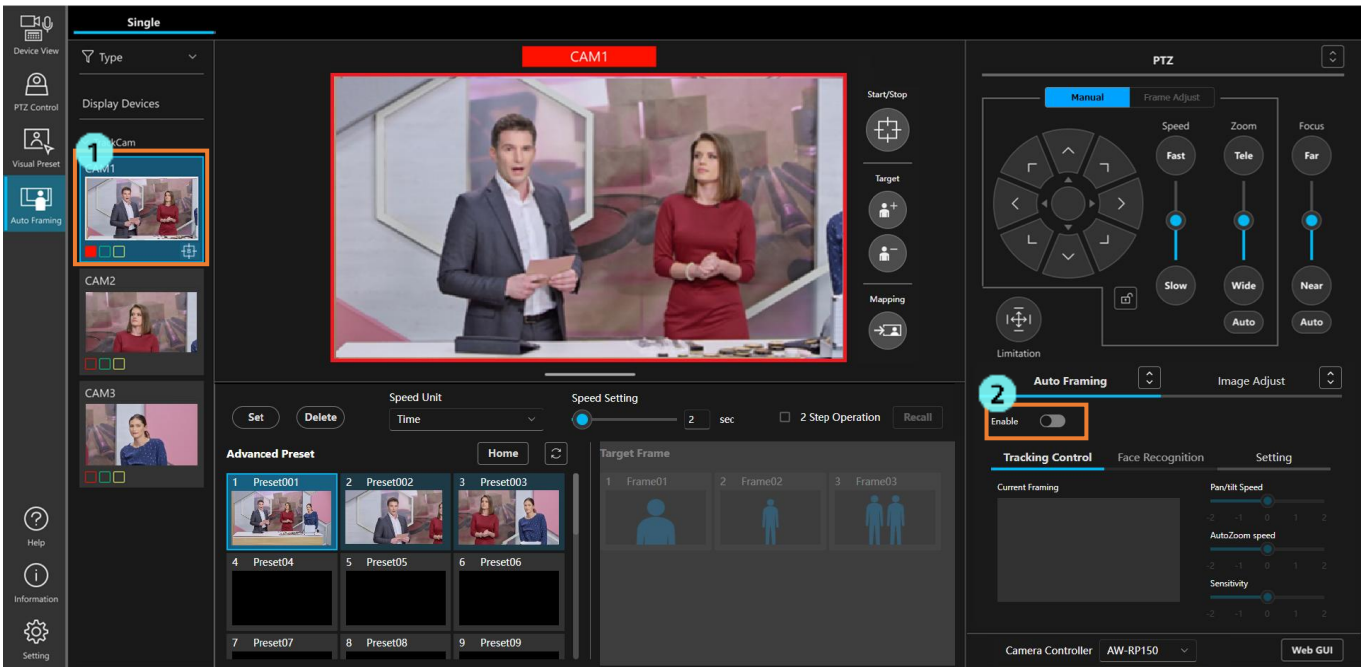
   When linking with a remote camera controller, select the target remote camera controller.

   For details, refer to "Configuring the Settings for Remote Camera Controller Linkage" in this manual.

2. Camera web interface display button

   Press this button to view the web interface of the PTZ camera on your PC's web browser.

Switching ON/OFF the Auto Framing Function

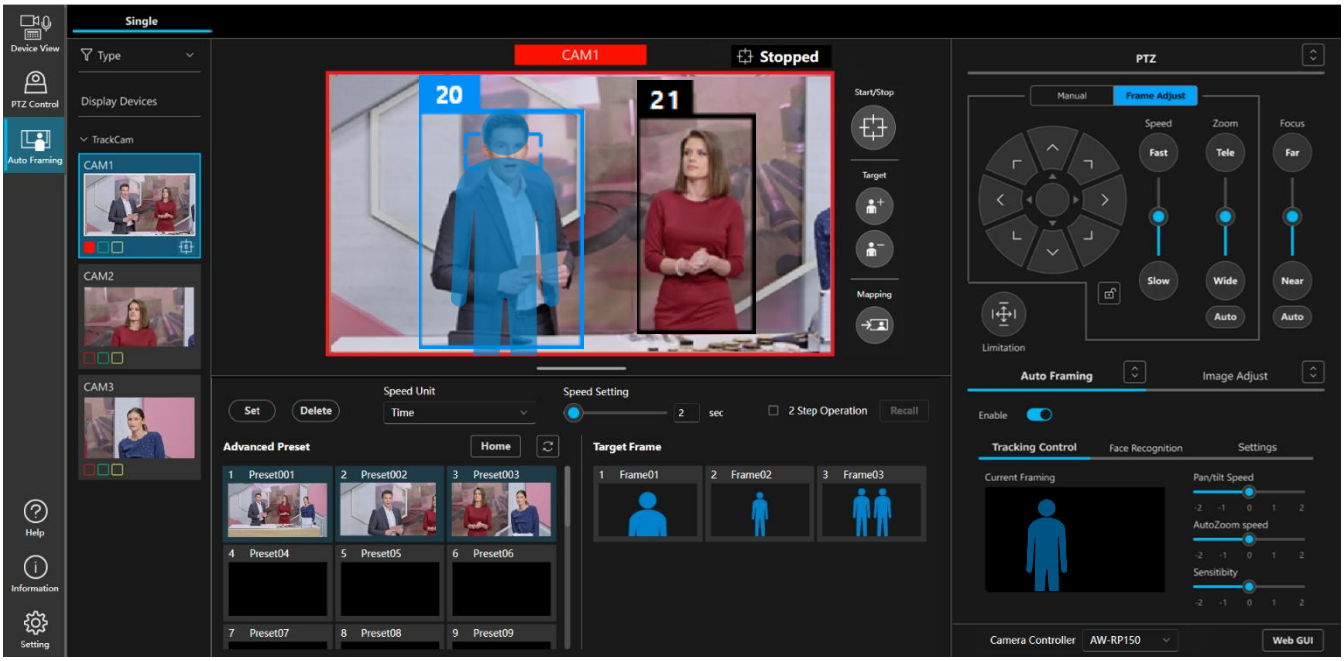


When using this function, you must turn ON the auto framing function of the PTZ camera.

Turn ON the auto framing function according to the procedure below.

1. In the camera list display area, select the PTZ camera that supports this function.
2. The Auto Framing area on the right side of the screen will be enabled. Click the Enable switch to turn it on.

If the auto framing function is turned ON, the composition of the current framing settings will be displayed as human silhouettes in the camera image display and the Current Framing field at the bottom right of the screen. When a person is detected in the camera image, a human body frame is displayed around the detected person, and if the conditions are satisfied, the framing target is set. If the button for starting/stopping the auto framing operation is enabled, camera control is started so as to match the framing target with the position and size of the human silhouette.



If you click the Enable button again when the auto framing function Enable switch is ON, the function turns OFF.

<NOTE>

- If a PTZ camera that does not support this function is selected in the camera list display area, the Auto Framing area will not be enabled, and it will not be possible to turn the auto framing function ON. In such a case, only manual PTZ operation/Preset operation and Image Adjust operation can be performed.

Framing Target Automatic Selection Conditions

If the start conditions given below are satisfied when the auto framing Enable switch is ON, the framing target is set. The framing target person is displayed within a blue or light blue frame.

Start conditions

Facial Recognition settings	Auto Start Area settings	Framing Target Automatic Selection Conditions
OFF	OFF	People appearing in camera images will be detected
	ON	People appearing in the Auto Start Area will be detected
Select a specific face	OFF	The selected face will be detected if it appears in a camera image
	ON	The selected face will be detected if it appears in the Auto Start Area
Set Auto Face Search to ON	OFF	Any face that is within the camera view and registered in the database will be detected
	ON	Any face that is within the Auto Start Area and registered in the database will be detected

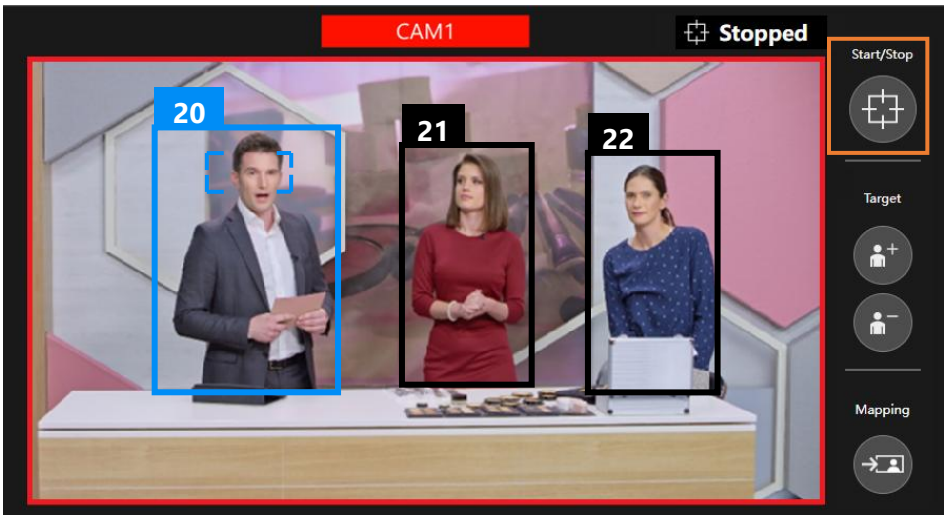
<NOTE>

- If multiple persons are detected in the camera image, the person closest to the composition of the target frame will be the framing target.

  If you want to take a group shot by adding the framing target, add the framing target according to the contents in "Taking a Group Shot of Multiple Human Targets".
- If you turn ON the button for starting/stopping the auto framing operation, camera control is started, and the camera moves in accordance with the movement of the framing target.
- For details on facial recognition settings, refer to "Using the Facial Recognition Function".

Starting/Stopping the Auto Framing Operation

Enable or disable the camera Pan/Tilt/Zoom framing control with the toggle button for starting/stopping the auto framing operation that is present on the side of the camera image (orange-colored frame in the figure below).



■ The button is OFF (displayed in gray)

The camera Pan/Tilt/Zoom framing control is disabled.

The camera does not move even if the framing target moves.

■ The button is ON (displayed in blue)

The camera Pan/Tilt/Zoom framing control is enabled.

Pan/Tilt control is always performed automatically, but Zoom control varies depending on the status of the Auto Zoom button on the PTZ control panel.

- When the Auto Zoom button is OFF

  Only camera Pan/Tilt is controlled.

  The zoom position of the camera is fixed to the position of the zoom slider on the PTZ control panel.

- When the Auto Zoom button is ON

  Camera Pan/Tilt/Zoom are all controlled.

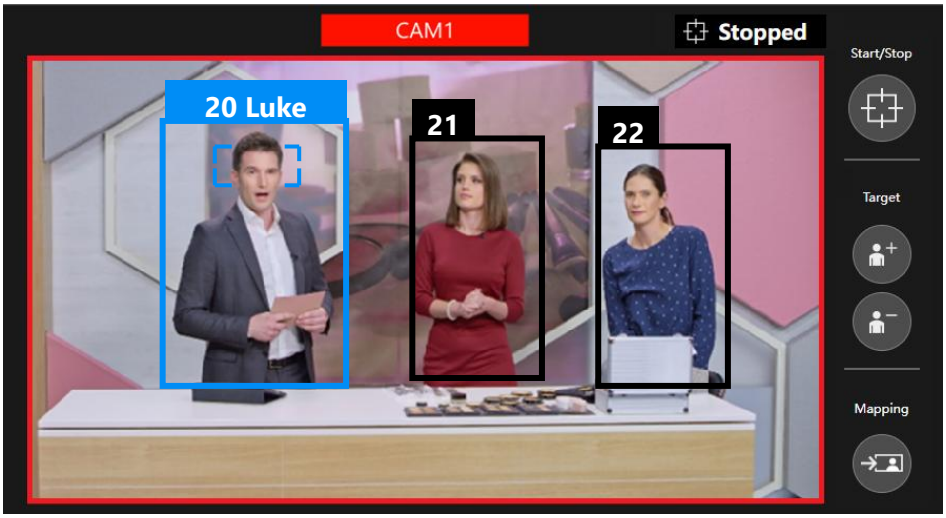
Performing Framing for a Single Person

This section describes the operation when framing is performed in a case where the framing target is a single person.

■ Camera image display

The human body frame of the framing target is displayed in blue, and the human body frame of other than the framing target is displayed in black. In the figure below, the person the left side is the framing target.

- If face tracking auto-focus is active, a rectangle is displayed around the face that is the focus target.
- The control number displayed above each human body frame allows you to identify the person. If a person is lost as a result of moving out of the screen and is then redetected, a different control number may be assigned even if the person is the same.
- When the face of a person specified with the facial recognition function is detected, the registered name of the person is displayed next to their control number. If the registered name contains characters other than letters and numbers, the registered name may be displayed as ??.

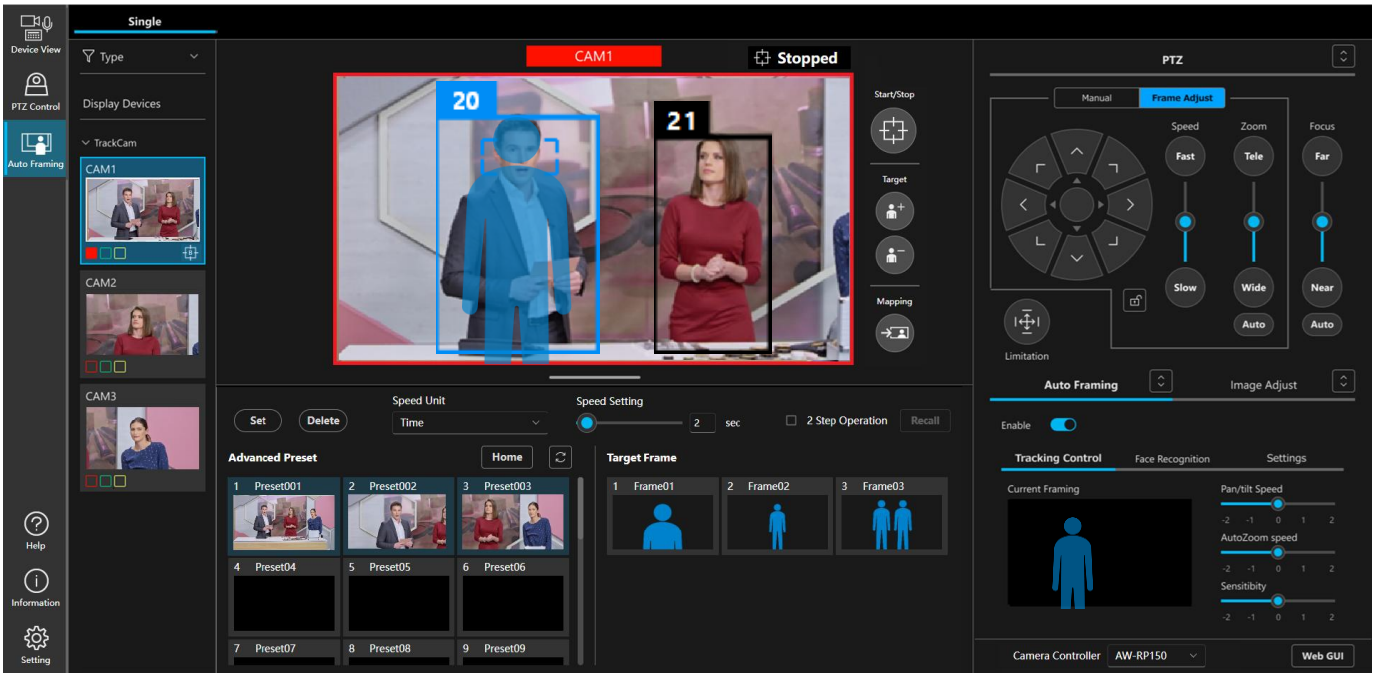


■ Framing settings and auto framing operation

In the Current Framing field at the bottom right of the screen, a human silhouette indicating the composition of the current framing settings is displayed. When the toggle button for starting/stopping the auto framing operation is OFF, the human silhouette is displayed on the camera image as well.

When framing is performed for one person, basically only one human silhouette is displayed.

During framing, the camera is controlled so that the position and size of the framing target match the position and size of the human silhouette.



■ Focus operation when the camera auto-focus is ON

- Camera with face tracking auto-focus support

  When the camera auto-focus is ON, the focus is activated so as to be set on the person who is the target of auto-focus. A small rectangle implying the auto-focus target is displayed around the face of the person who is the target of auto-focus. In the case of framing for a single human target, the person who is the framing target becomes the target of auto-focus. A person who is not the framing target cannot be set as the target of auto-focus.

- Camera without face tracking auto-focus support

  Regardless of the position of the target for framing, the focus is in the center of the camera image. The small rectangle that indicates the target of auto-focus is not displayed.

■ Operation when the framing target is to be changed to another person

If you click a person other than the framing target in the camera image (a person displayed in the black human body frame), the framing target will change to the clicked person. For a camera with face tracking auto-focus support, the auto-focus target of the camera will also change to the clicked person.

<NOTE>

• When a person specified in the Face Recognition tab is recognized in the image, it is not possible to change the target of framing by clicking on a human body frame. Please change the facial recognition settings. For details on facial recognition settings, refer to "Using the Facial Recognition Function".

■ Operation when the framing target is lost

The operation when the framing target is lost is as described below.

1. Wait for the same ID target to be redetected for the time period set in "Duration before judgement of lost state" in "Detail Setting". If a person is temporarily lost, for example by going off-screen, and then re-detected, a different ID may be assigned to the same person.

When the target is redetected within the time period: Framing continues with the person as the target.

When the target is not redetected within the time period: The target is in the lost state and the processing proceeds to step 2.

2. If “Initial Position” is set in “Detail Setting”, after the time period set in “Duration before recalling initial position” in “Detail Setting” elapses, the Initial Position is recalled, and the processing proceeds to step 3.
   If “Initial Position” is not set in “Detail Setting”, no operation is performed, and the processing proceeds to step 3.
3. Return to the state of waiting for the framing target to be detected. If the start conditions are satisfied again, auto framing starts.

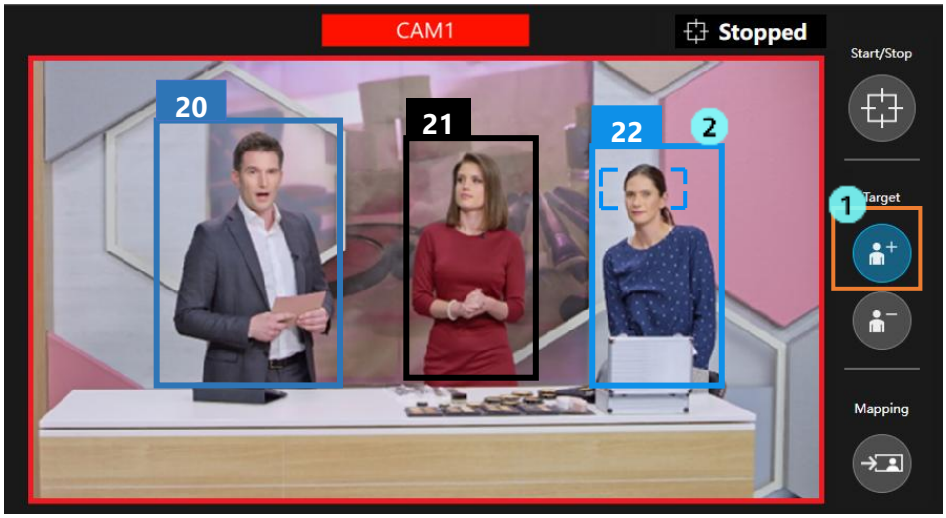
Taking a Group Shot of Multiple Human Targets

This section describes the operation when a framing target is added and a group shot is taken of multiple human targets.

■ Adding/deleting a framing target

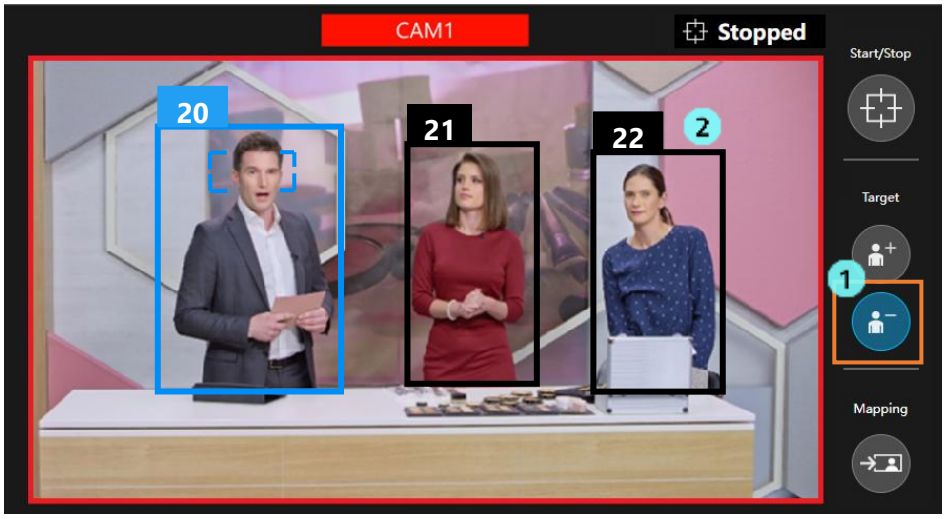
Add a framing target according to the procedure below.

1. Click the + button of the Target on the right of the camera image to turn it ON.
2. If you click a person to be added in the camera image, the clicked person will be added as the framing target.



Delete the added framing target according to the procedure below.

1. Click the - button of the Target on the right of the camera image to turn it ON.
2. If you click the person to be deleted in the camera image, the clicked person will be deleted from the framing target.



<NOTE>

- A maximum of 10 persons can be set as the framing target.
- If there are two human framing targets and any one target is deleted, the operation will change to framing for a single human target.
- When a person specified in the Face Recognition tab is recognized in the image, it is not possible to delete that

person from the target of framing.

■ Camera image display

The human body frame of the framing target is displayed in blue, and the human body frame of other than the framing target is displayed in black.

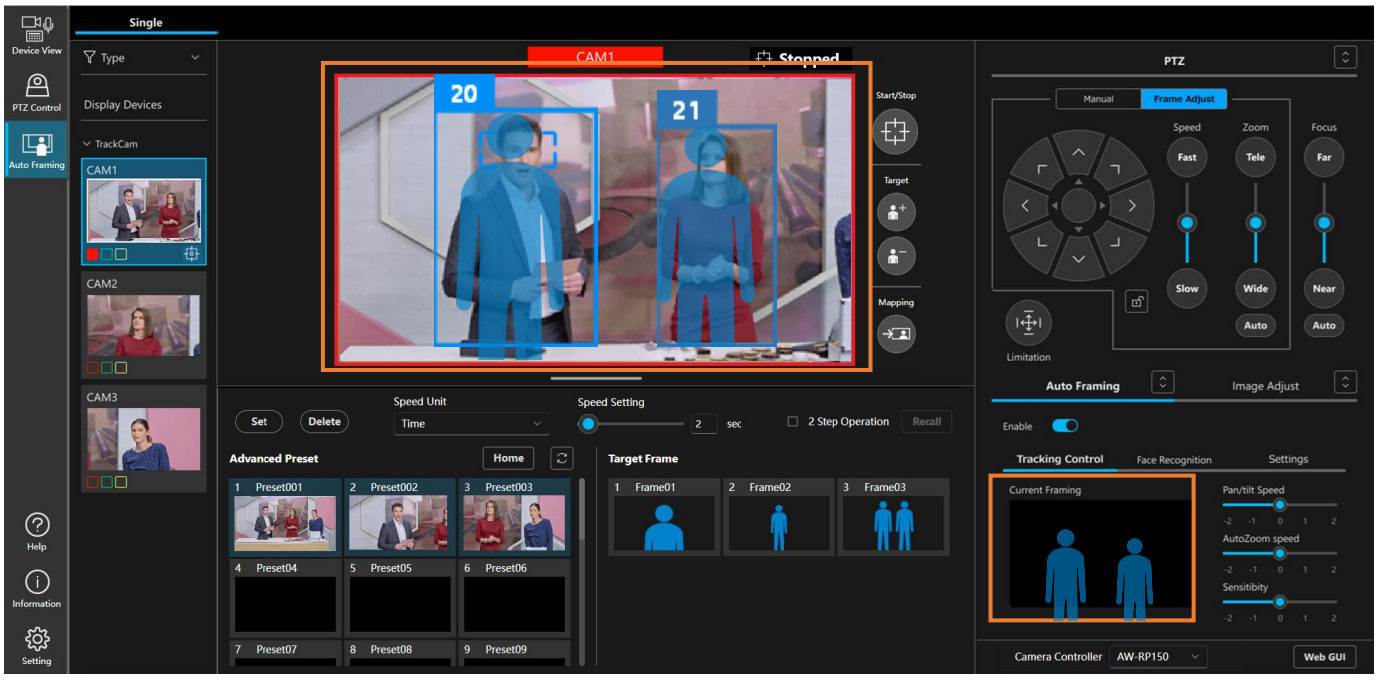
If you click the framing target, one person will be displayed in the selected state in a bright blue frame. The selected target becomes the target of auto-focus, and also becomes the framing target when the one-shot Target Frame is recalled.

The control number displayed above each human body frame allows you to identify the person. If a person is lost as a result of moving out of the screen and is then redetected, a different control number may be assigned even if the person is the same.

■ Framing settings and auto framing operation

A human silhouette indicating the current composition is displayed in the Current Framing field at the bottom right of the screen. When the toggle button for starting/stopping the framing operation is OFF, the human silhouette is displayed on the camera image as well.

In a group shot, two human silhouettes are normally displayed. During framing, the camera is controlled so that the position and size of the two persons positioned at both ends among the human framing targets match as much as possible with the position and size of the two human silhouettes. In particular, frame the shot to reproduce the size of the human silhouette. If the angle of view becomes wider because the person is farther away, the person's size may become smaller than the silhouette.



■ Focus operation when the camera auto-focus is ON

- Camera with face tracking auto-focus support

When the camera auto-focus is ON, the focus is activated so as to be set on the person who is the target of auto-focus in the camera image. A small rectangle implying the auto-focus target is displayed around the face of the person who is the target of auto-focus.

- Camera without face tracking auto-focus support

Regardless of the position of the target for framing, the focus is in the center of the camera image. The small rectangle that indicates the target of auto-focus is not displayed.

■ Operation when the auto-focus target is to be changed to another person (only supported for a camera with face tracking auto-focus support)

If you click any person in the camera image, the target of auto-focus will change to the clicked person. At the time of a group shot, a person who is not the framing target can be set as the target of auto-focus.

■ Operation when the framing target is lost

The operation when any one of the persons set as the framing target is lost is as described below.

1. Wait for the same ID target to be redetected for the time period set in “Duration before judgement of lost state” in “Detail Setting”. If a person is temporarily lost, for example by going off-screen, and then re-detected, a different ID may be assigned to the same person.

   When the target is redetected within the time period: Framing continues.

   When the target is not redetected within the time period: The target is in the lost state and the processing proceeds to step 2.
2. Delete the lost person from the framing target and continue with framing.

   * If there were two human framing targets before one got lost, the operation will change to auto framing for a single human target.

Configuring the Framing Settings

(Composition and Camera Moving Speed/Sensitivity Settings)

You can adjust the framing settings, including the composition (position and size of displaying the framing target) and the camera moving speed and sensitivity at the time of framing.

■ Adjusting the composition

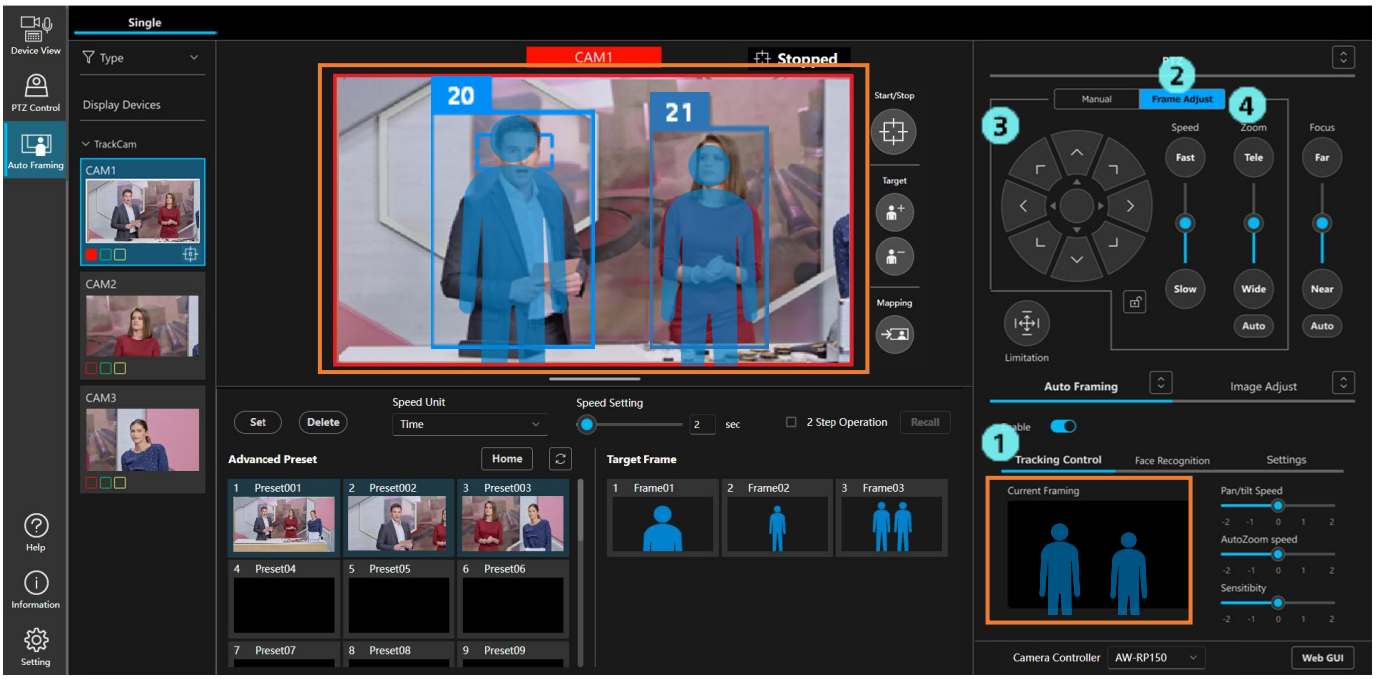
This section describes the procedure of adjusting the composition by using the PTZ control panel.

The procedure is common for both auto framing for a single human target and taking a group shot of multiple human targets.

- When camera control is OFF

  1. Select the Tracking Control tab in the Auto Framing tab.
  2. Set the Frame Adjust tab on the PTZ control panel to the selected state.
  3. If you press the Pan/Tilt operation button on the PTZ control panel, the human silhouette on the camera image and in the Current Framing field at the bottom right of the screen moves.
  4. By operating the zoom button/slider on the PTZ control panel, the size of the human silhouette on the camera image and in the Current Framing field at the bottom right of the screen changes.

5. Carry out steps 3 and 4 to adjust the human silhouette to the position and size at which you want to display the framing target.



・When camera control is ON

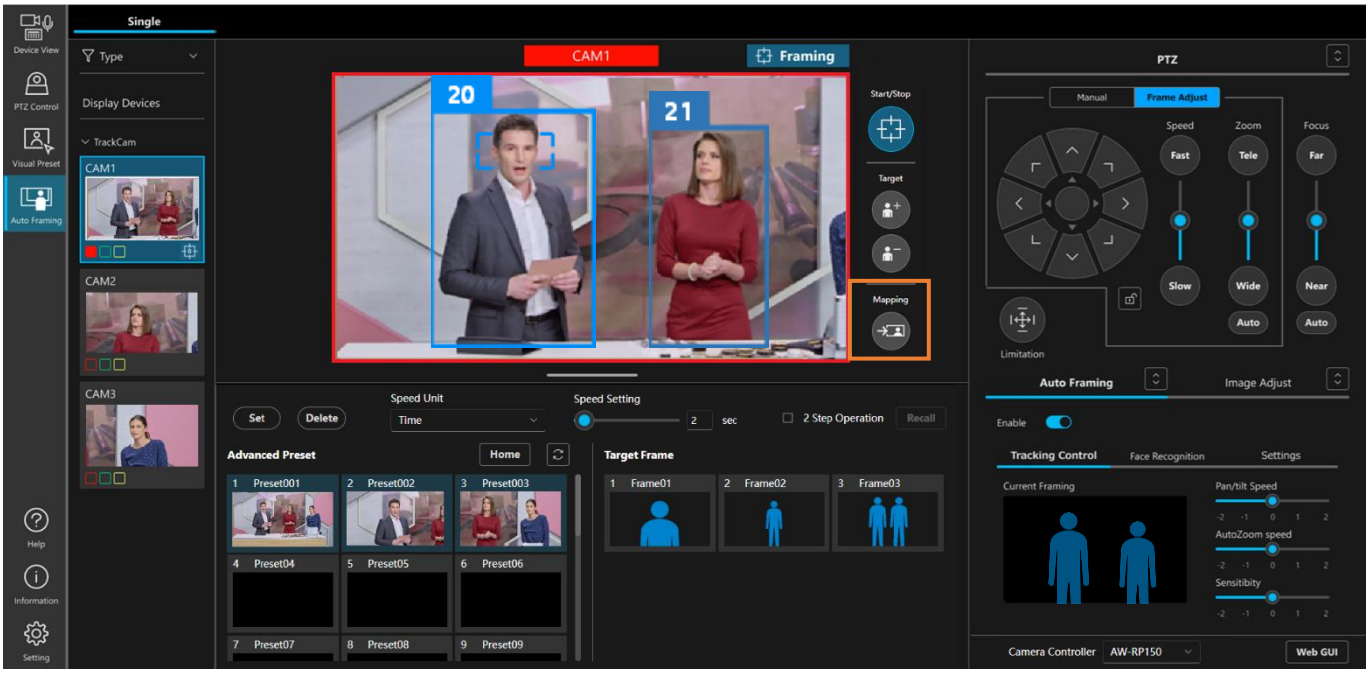
1. Select the Tracking Control tab in the Auto Framing tab.
2. Set the Frame Adjust tab on the PTZ control panel to the selected state.
3. If you press the Pan/Tilt operation button on the PTZ control panel, the human silhouette in the Current Framing field at the bottom right of the screen moves, and in accordance with that, the Pan/Tilt position of the camera also moves.
4. By adjusting the zoom button/slider on the PTZ control panel, the size of the human silhouette in the Current Framing box at the bottom right of the screen changes, and the camera's zoom position also moves accordingly.
5. Carry out steps 3 and 4 to adjust the position and size of the framing target.

■Apply the current framing target as a composition

The position and size of the framing target in the camera image can be applied as a composition.

1. Press the Mapping button on the right of the camera image while the framing target is being displayed in the camera image.
2. When the Mapping button is pressed, a composition is created based on the position and size of the framing target at that point, and it is displayed as a human silhouette in the Current Framing box in the lower right of the screen.

   * When taking a group shot, the composition is created based on the positions and sizes of the two people at the ends of the framing target.



■Adjust the moving speed and sensitivity of the camera

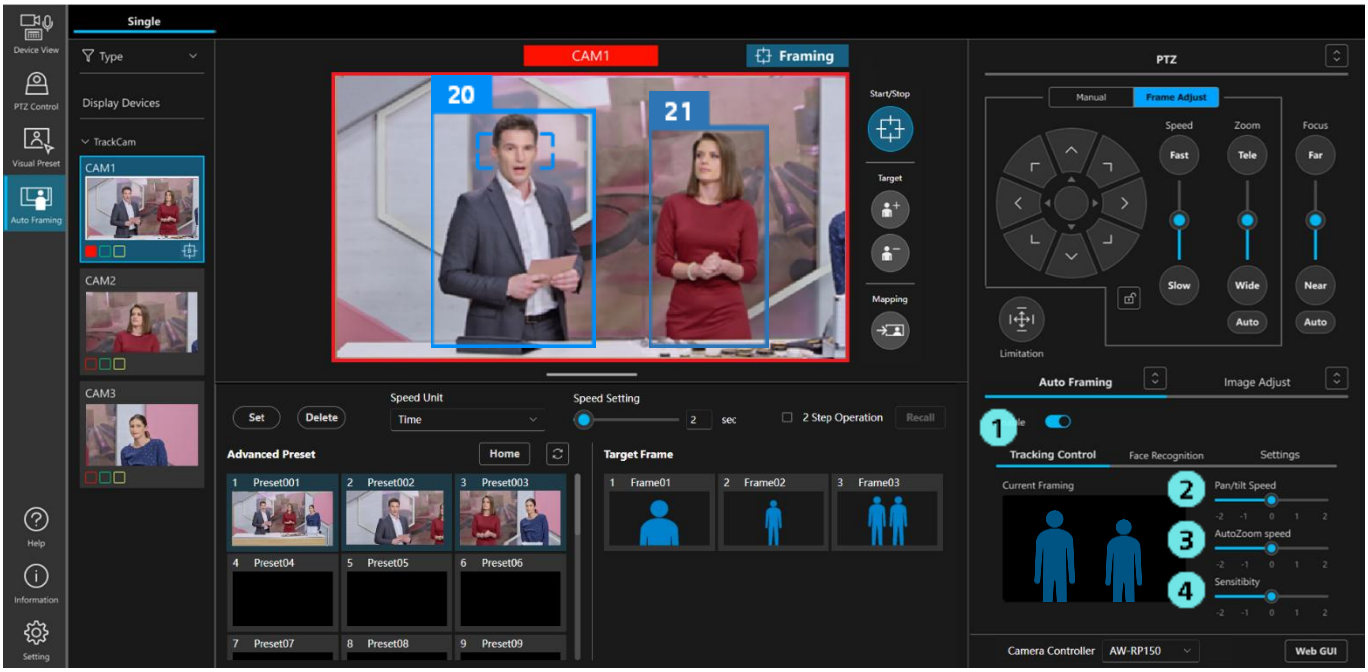
The moving speed and sensitivity of the camera can be adjusted while auto framing is activated.

1. Select the Tracking Control tab in the Auto Framing tab.
2. Adjust Pan/Tilt speed of the camera with the slider.

   -2 (slow) to 0 (standard) to 2 (high)
3. Adjust the zoom speed of the camera using the Auto Zoom Speed slider.

   -2 (slow) to 0 (standard) to 2 (high)
4. Adjust the sensitivity of the camera (how much the camera reacts to the movement of the subject being targeted for framing) using the Sensitivity slider.

   -2 (low) to 0 (standard) to 2 (high)



Registration and recall operations of the target frame

The framing setting can be registered as a target frame and recalled at any time.

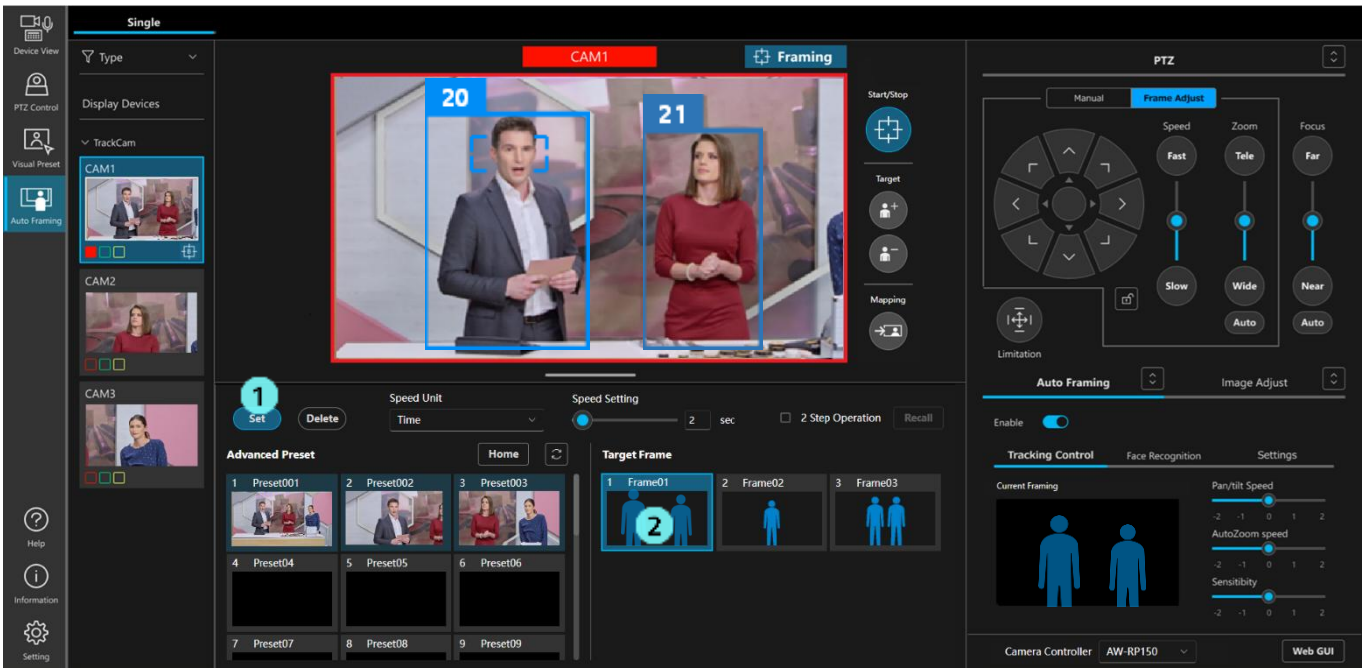
Target frames: When using the Advanced Auto Framing function: Up to 20 can be registered, when using AW-UE160 Auto Framing function: Up to three can be registered.

Settings saved in the target frame are:

- Composition information displayed in the Current Framing box
- Moving speed of the camera (Pan/Tilt Speed, Auto Zoom Speed)
- Sensitivity of the camera (Sensitivity)
- Preset Speed setting (Speed Unit and Speed Setting)

■Register a target frame

1. Press the Set button in the Preset area to turn it on.
2. Click the thumbnail of any target frame in the Target Frame box, then the framing settings at that time will be registered.



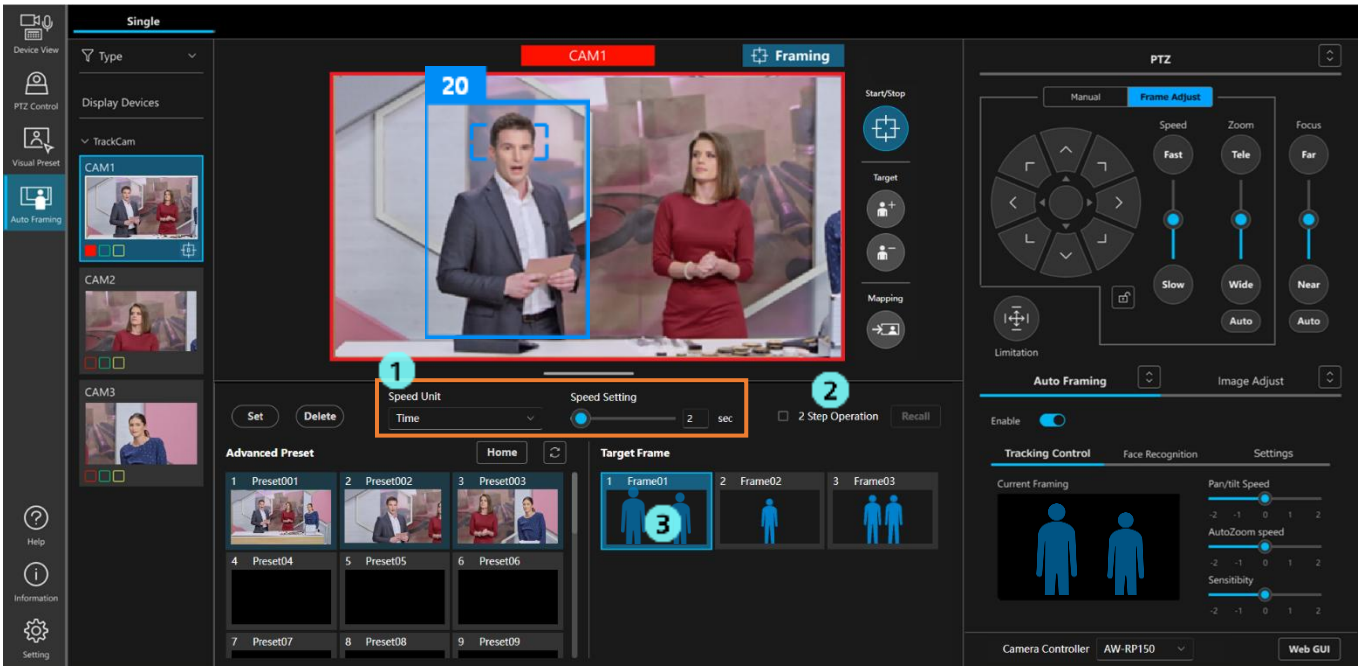
■Recall the registered target frame

There are two ways to recall the registered target frame:

- Click the thumbnail to recall it immediately
- Click the thumbnail to select, then click the Recall button to recall it

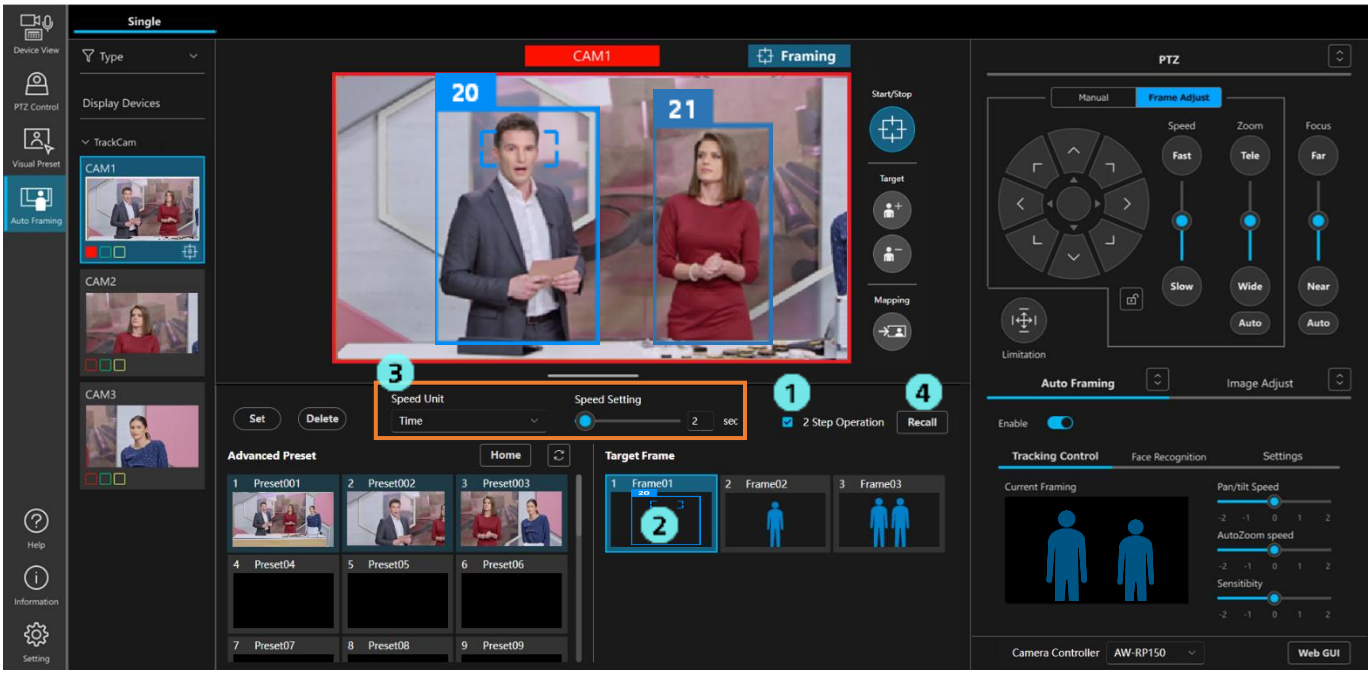
- Procedure for immediate recall by clicking a thumbnail

1. Set the moving speed of camera after recalling a preset using the Speed Unit and Speed Setting in the Preset area
2. Turn off the check box of 2 Step Operation in the Preset area.
3. Click any thumbnail in the Target Frame box to recall the settings.



・ Click the thumbnail to select, then click the Recall button to recall it

1. Turn on the check box of 2 Step Operation in the Preset area.
2. Click any thumbnail in the Target Frame box to activate it.
3. Set the camera's moving speed in the Speed Unit and Speed Setting in the Preset area.
4. Click the Recall button in the Preset area to recall the settings.



<NOTE>

• The speed of auto framing to the target frame varies according to the speed setting value.

• When a target frame in which two human silhouettes are registered is called, and

• When no face is specified with Face Recognition

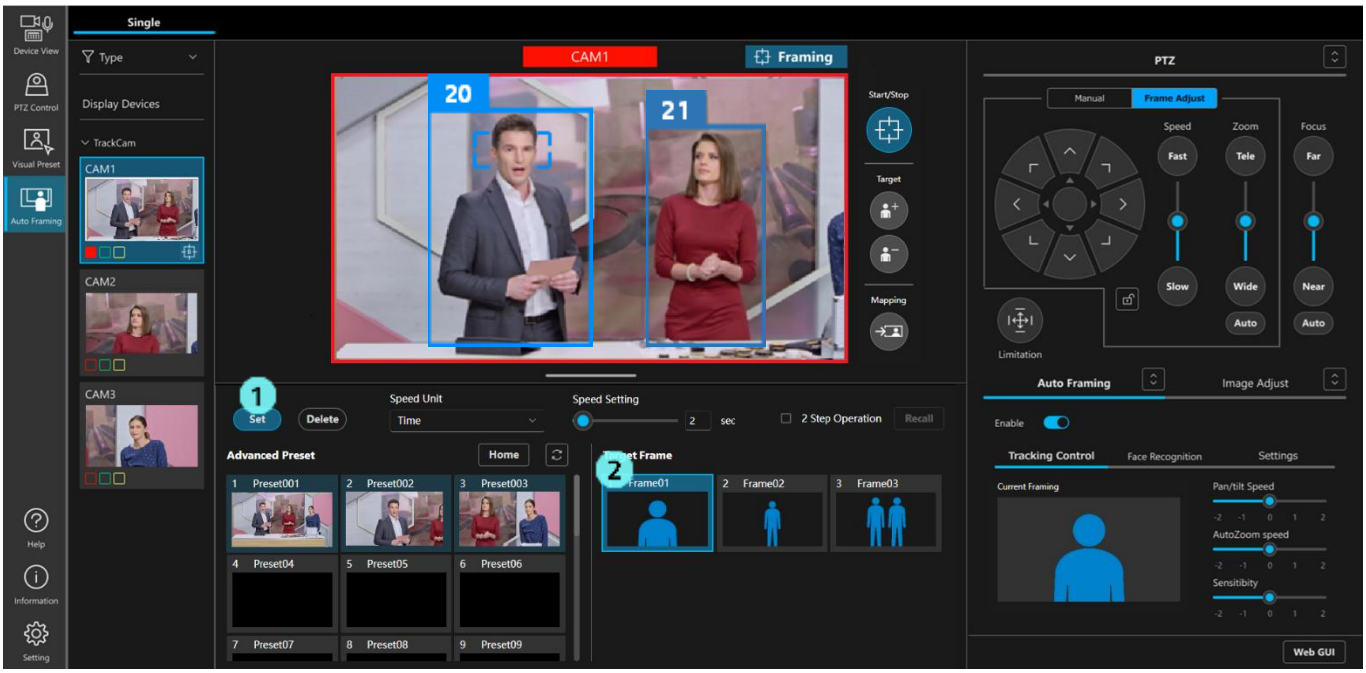
• If multiple persons are detected in the camera image, the shooting mode automatically switches to two-person shot.

• If a face is specified with Face Recognition

If the specified person is detected within the camera image, the shooting mode automatically switches to group shot (up to four persons).

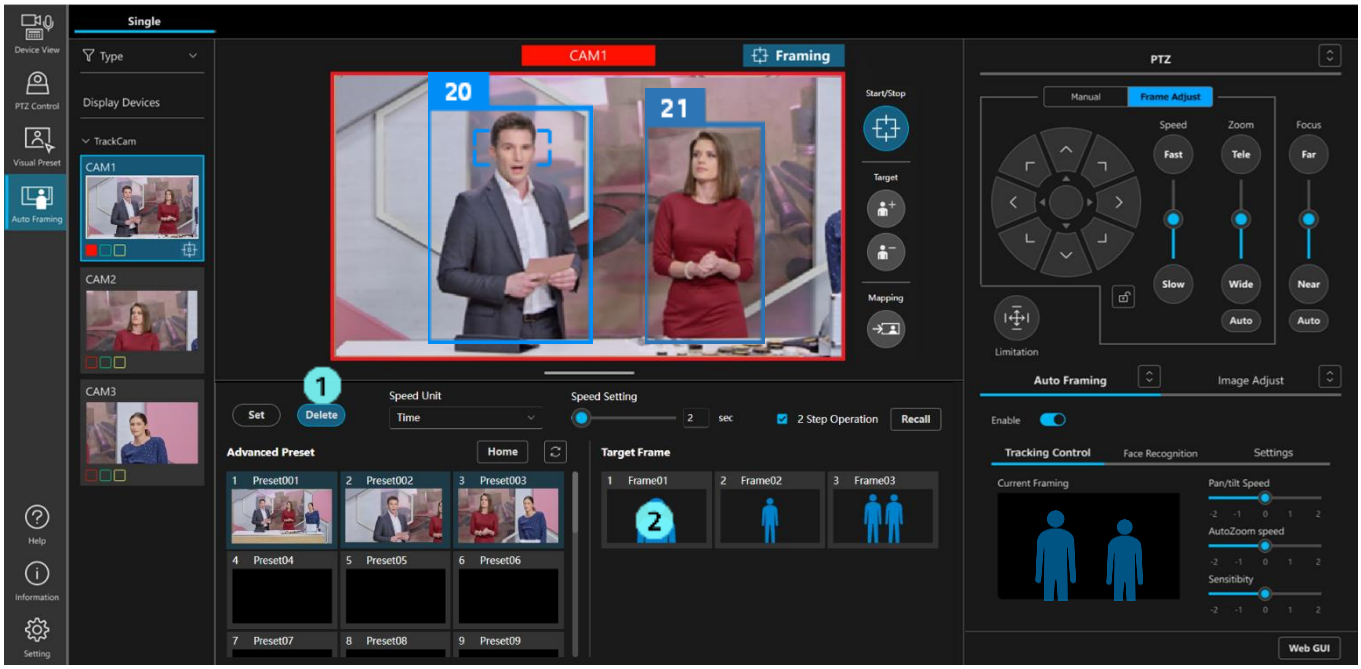
■Change the name of the target frame

1. Press the Set button in the Preset area to turn it on.
2. Click the name field in the Target Frame box to edit and change the name.



■Delete the target frame

1. Click the Delete button in the Preset area to turn it on.
2. Click any thumbnail in the Target Frame box to delete the target frame.



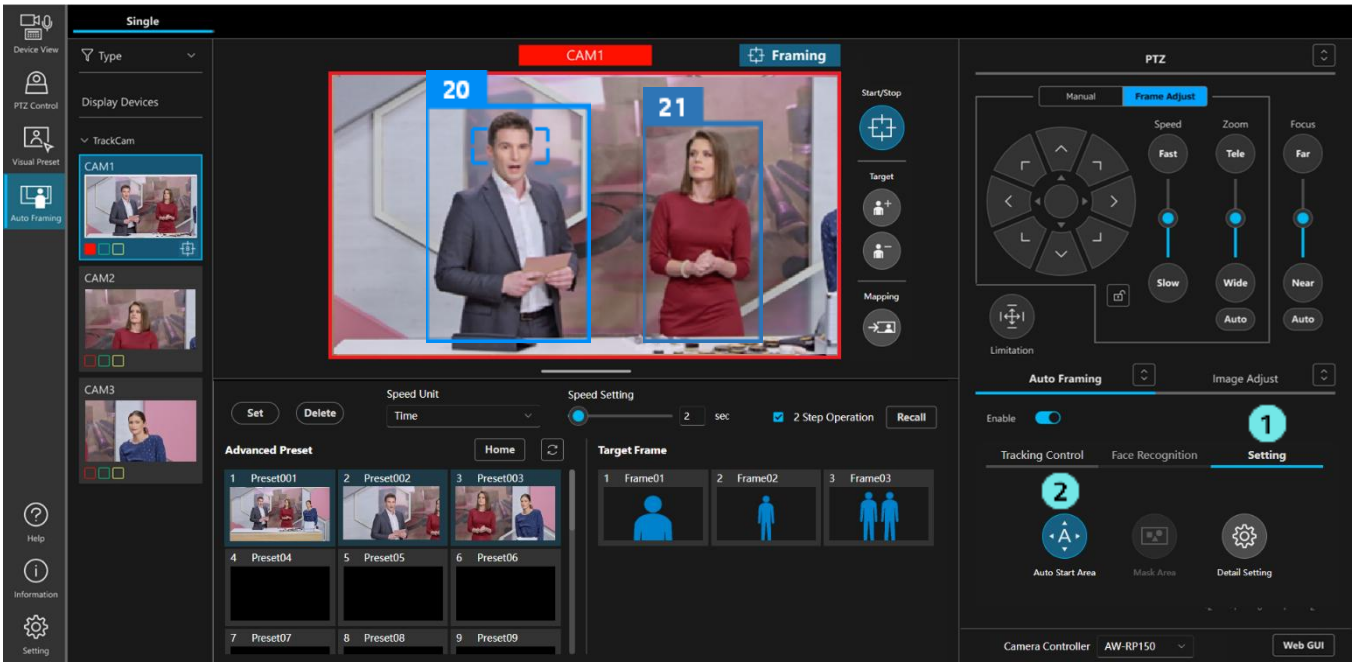
Set the Auto Start Area

By setting the Auto Start Area, when a human body frame is detected within the area, the condition will change to select the framing target.

- Only one area can be set.
- The position of the area is saved by linking to the camera's Pan/Tilt/Zoom position at the time of setting. Therefore, if the camera's Pan/Tilt/Zoom position is moved after setting, the position and size of the area will also change accordingly.

■How to set an Auto Start Area

1. Select the Setting tab in the Auto Framing tab.
2. Click the Auto Start Area button to turn it on.
   If the Initial position is set in the Detail Setting, the camera will move to the Initial position automatically. If the Initial position is not set, the camera will not move.
3. Click on the camera image and drag it to display a frame indicating the area. Once dragging is finished, the setting is complete.
4. After setting the framing area, auto framing operations start if a body frame is detected within the area.



■How to cancel the Auto Start Area

1. In the same way as when setting, click the Auto Start Area button to turn it on.
2. Click the X button in the top right corner of the display to cancel the area setting.

■How to change the Auto Start Area

1. In the same way as when setting, click the Auto Start Area button to turn it on.
2. To reposition the area, click within the created frame and drag it.
   To readjust the size of the area, click on a corner or edge of the created frame.

<NOTE>

- When the Auto Start Area button is turned off while the Auto Start Area is set, the area display on the camera image will disappear, but the area operation will remain enabled.
  To disable the area operation, follow the steps above to cancel the area setting.

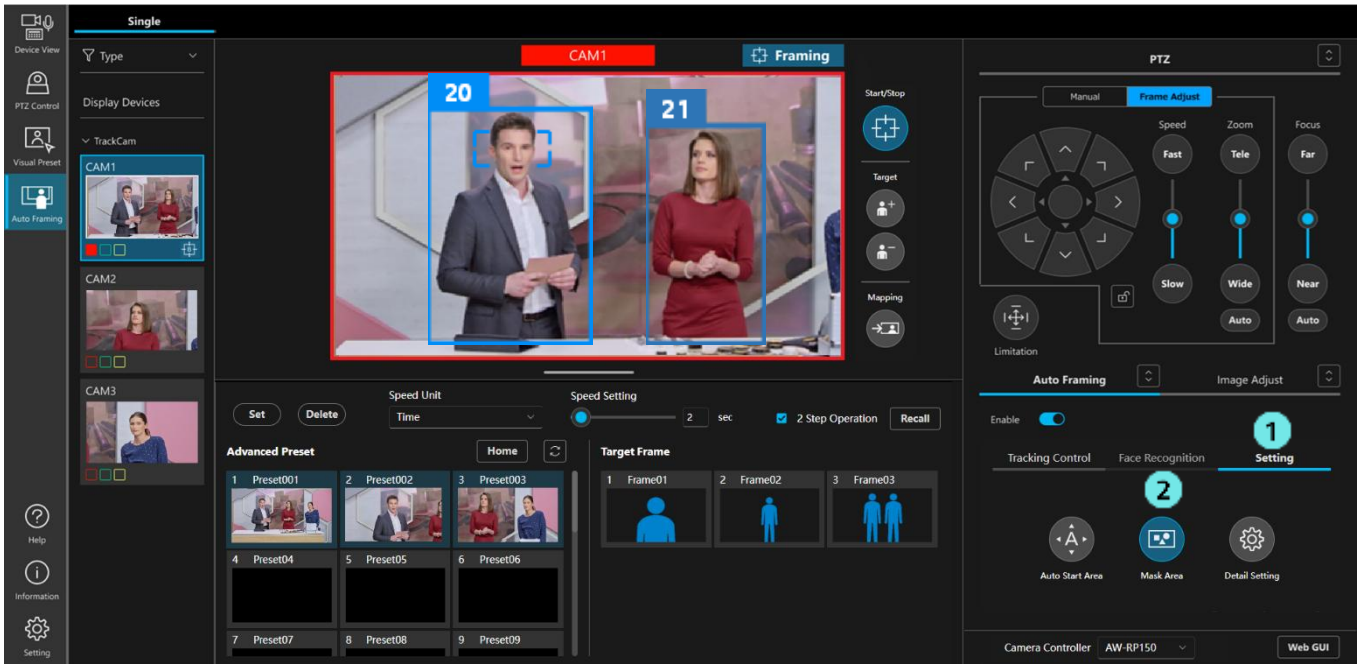
Set the Mask Area

Mask areas (areas that are not used for detection within the camera image) can be set for detecting people.

- Up to three areas can be set.
- The position of the area is saved by linking to the camera's Pan/Tilt/Zoom position at the time of setting. Therefore, if the camera's Pan/Tilt/Zoom position is moved after setting, the position and size of the area will also change accordingly.

■How to set a Mask Area

1. Select the Setting tab in the Auto Framing tab.
2. Click the Mask Area button to turn it on.
3. Click on the camera image and drag it to display a frame indicating the area. Once dragging is finished, the setting is complete.



■How to cancel the Mask Area

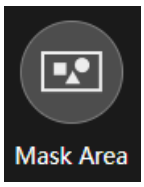
1. In the same way as when setting, click the Mask Area button to turn it on.
2. Click the X button in the top right corner of the display to cancel the area setting.

■How to change the Mask Area

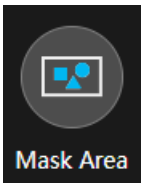
1. In the same way as when setting, click the Mask Area button to turn it on.
2. To reposition the area, click within the created frame and drag it.
   To readjust the size of the area, click on a corner or edge of the created frame.

<NOTE>

- When the Mask Area is set, the area operation will remain active even when the Mask Area button is turned off. To disable the area operation, follow the steps above to cancel the area setting.
- When the Mask Area button is turned off, the button display shows whether a Mask Area is set or not.



Mask area frame
Number of settings: 0



Mask area frame
Number of settings: 1 or more

Using the facial recognition function

Using the facial recognition function, you can capture images with only a specific person as the subject.
The following three methods are available for setting the target for facial recognition.

- Select only specific persons as the target (up to four)

  If a selected specific persons are detected, that person is set as the framing target.

  The lower the control number on the face database screen, the higher the priority. The framing target changes automatically.

- Set all persons registered in the face database as the target (Auto Face Search function)

  If a person registered in the face database is detected, that person is set as the framing target. The lower the control number on the face database screen, the higher the detection priority. After detection, no changes are made to the framing target for high-priority faces.

- You can temporarily set a person's face as the target of facial recognition by double clicking their face on the camera image.

  The target will be one person only. This face data will not be registered in the face database.

  If the target of facial recognition was specified with the Select button prior to double clicking, this setting will be cleared and the target of facial recognition will be temporarily changed.

For details on framing target settings, refer to "Framing Target Automatic Selection Conditions".

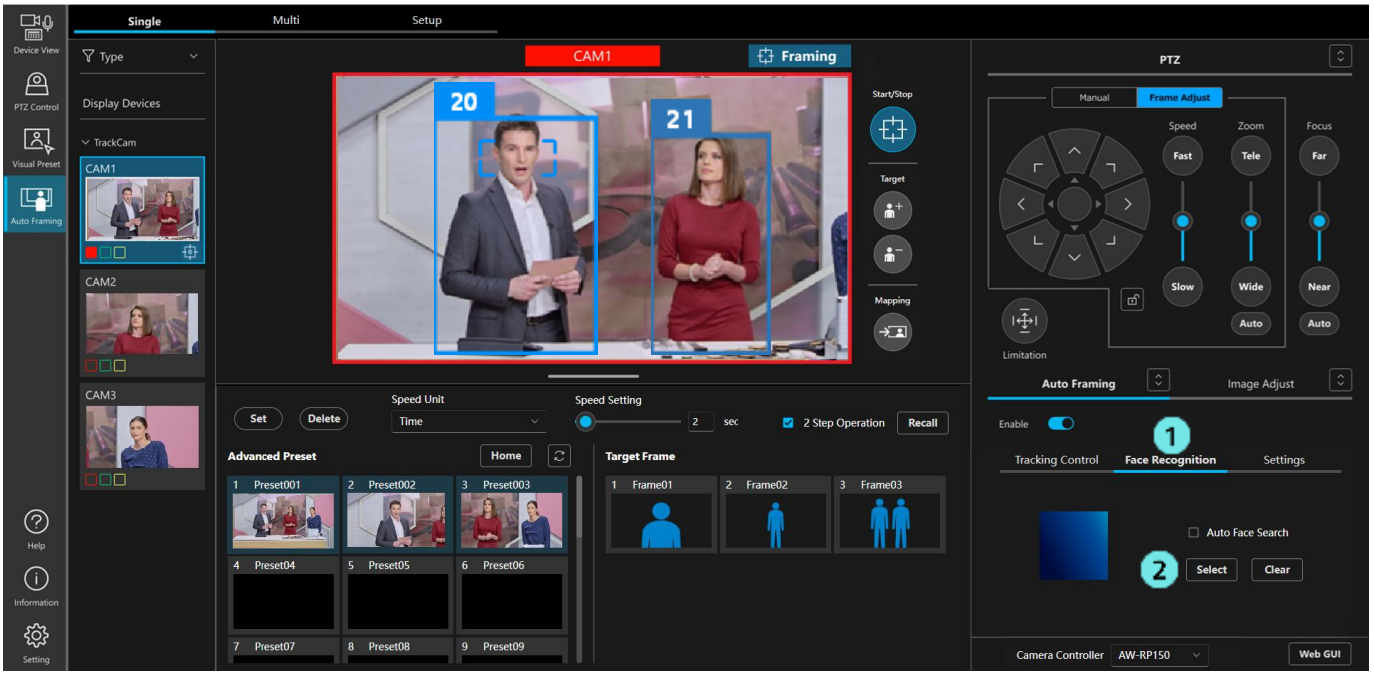
<NOTE>

- Facial recognition processing is performed by the computer on which this software runs. Information from facial recognition is never sent to external parties.

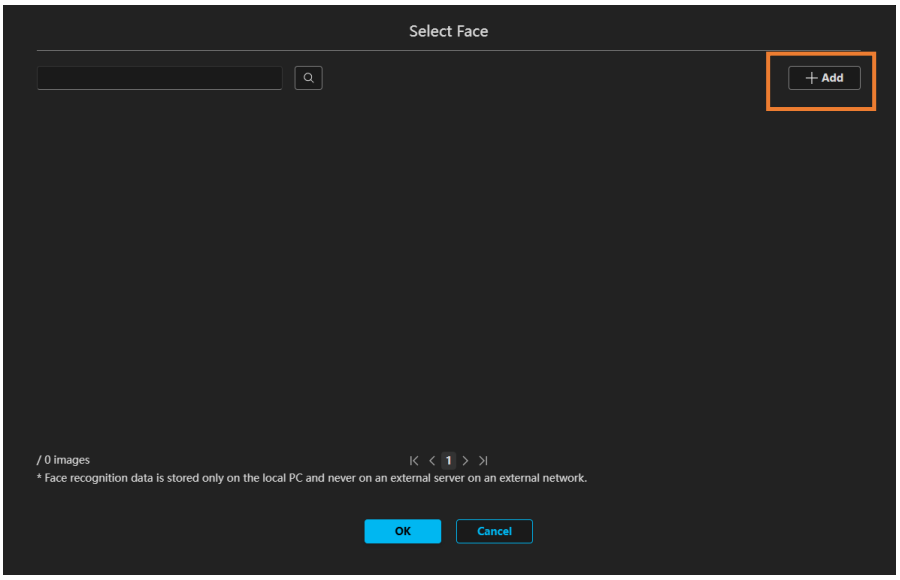
■Procedure for registering a face

If using the facial recognition function, it is necessary to register the data in advance.
Accounts are registered with the following procedure.

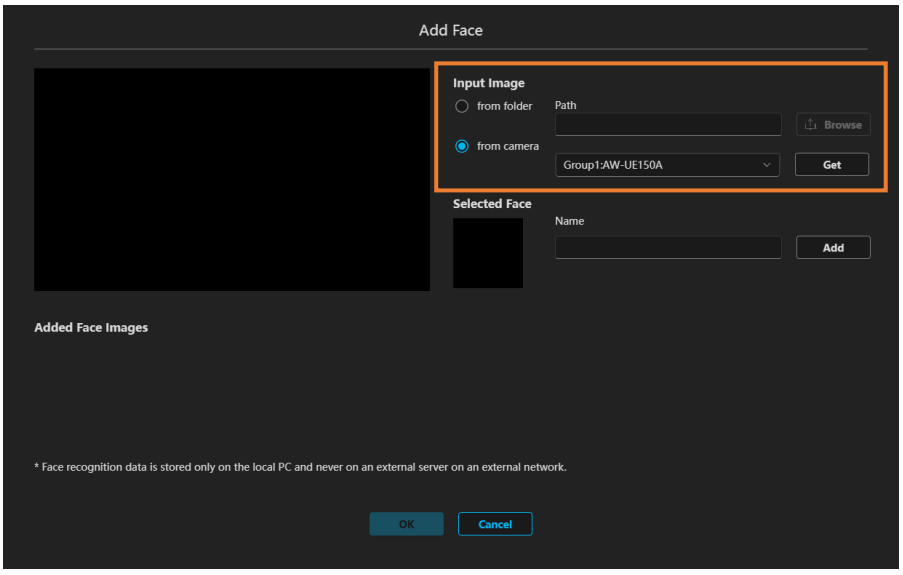
1. Select the Face Recognition tab in the Auto Framing tab.
2. Click the [Select] button to display the face selection screen.



3. Click the Add button in the top right of the selection screen to display the face registration screen.



4. Select the method for face registration from the Input Image field in the top right of the registration screen.



• From folder

Register a face using a JPEG image showing the face. Click the Browse button to display the file selection screen, and then select the JPEG image.

• From camera

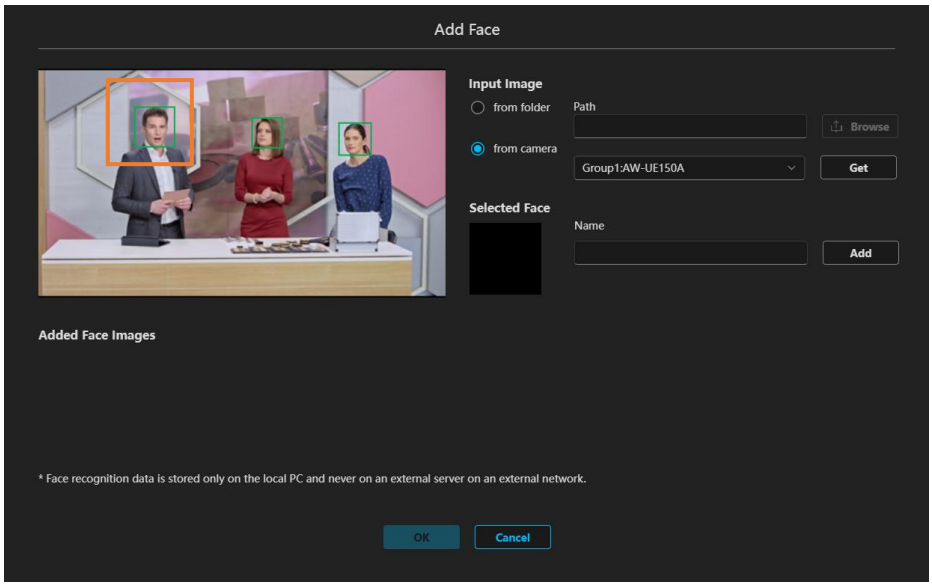
Register a face using the image camera shown. Select the camera from the list box, and click the Get button. The image from the camera is captured.

<NOTE>

• Only framing cameras that have the auto framing function switched on are displayed in the list box (reference cameras are also displayed if reference camera linking is enabled in multi-screen)

• When using reference camera linking, do not register the same person multiple times, as this may result in the subject not being framed correctly.

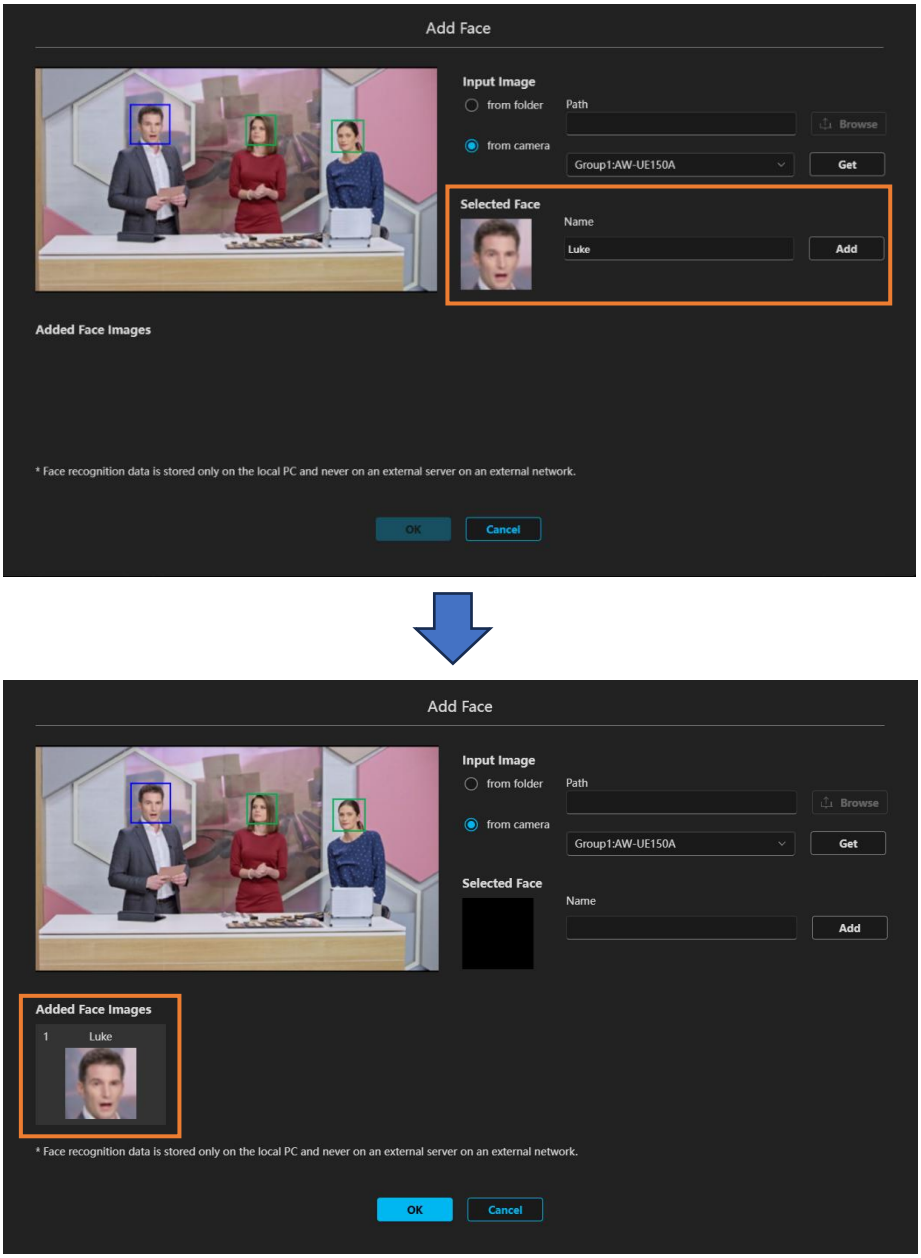
5. If faces are detected in the JPEG image selected in 4. or in the captured camera image, rectangles are displayed around the faces. Click the rectangle displayed around the face you wish to register.



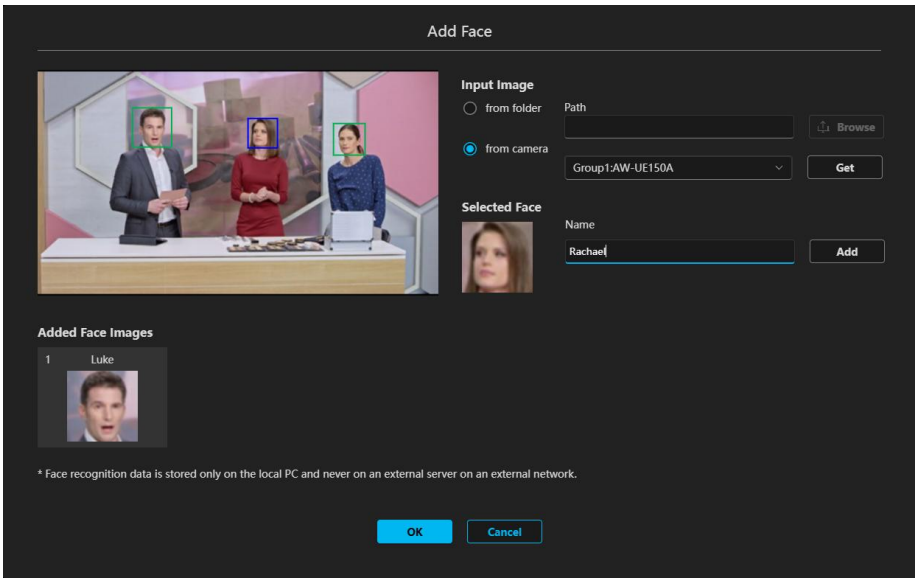
6. Enter the registration name in the Name box on the Selected Face field then click the Add button to add the face to the Added Face Images list.

<NOTE>

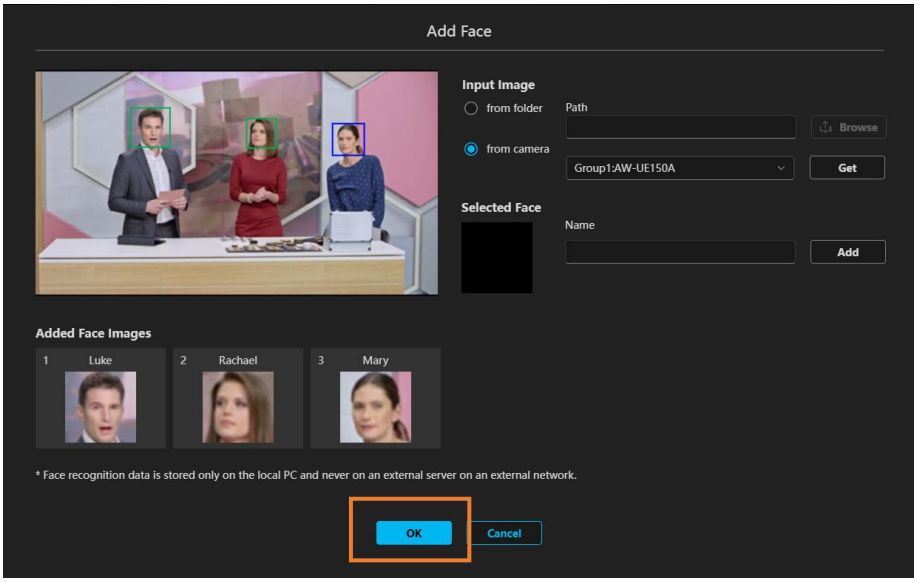
•If the registration name contains anything other than letters and numbers, the registration name may be displayed as ?? in the camera image display area.



7. If you wish to register multiple faces at once, you can do so by repeating 5. and 6. and adding them to the Added Face Images list.

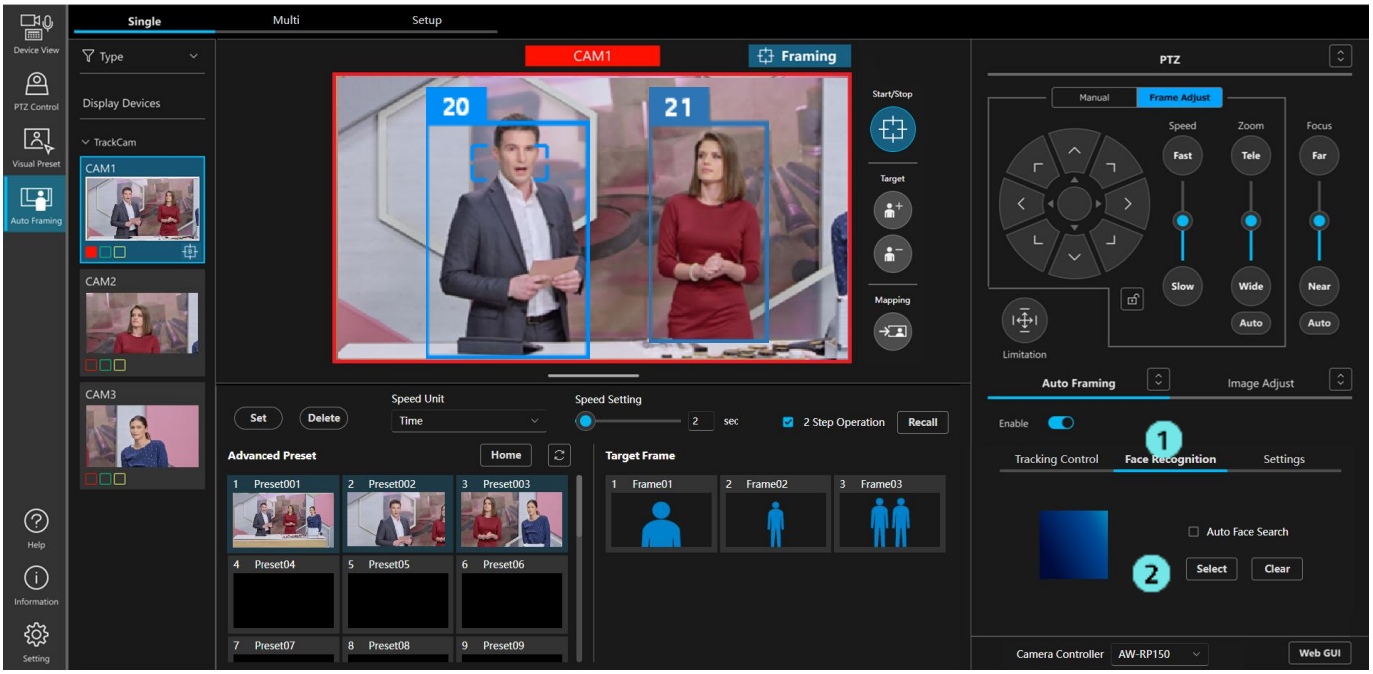


8. Click the OK button at the bottom of the registration screen to register all faces in the Added Face Images list.

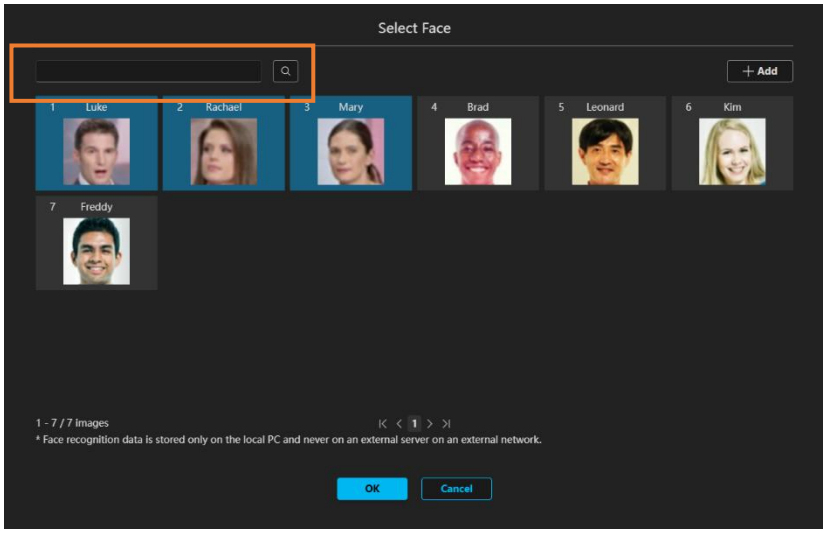


■ Setting procedure when selecting only specific persons as the target

1. Select the Face Recognition tab in the Auto Framing tab.
2. Click the [Select] button to display the face selection screen.



3. Select the person to be the target for facial recognition on the selection screen.
   When the face display area is clicked, the face is selected (highlighted in blue). You can deselect a selected face by clicking on it.
   You can select up to four faces. If you select multiple faces, they are set as framing targets with priority being given to the lowest control number first. If the target frame is a one person shot, when a face with a low control number is recognized, the framing target is automatically switched. If the target frame is a two person shot, the frame automatically switches to a group shot of 1 to 4 people so that the detected faces fit within the shot.



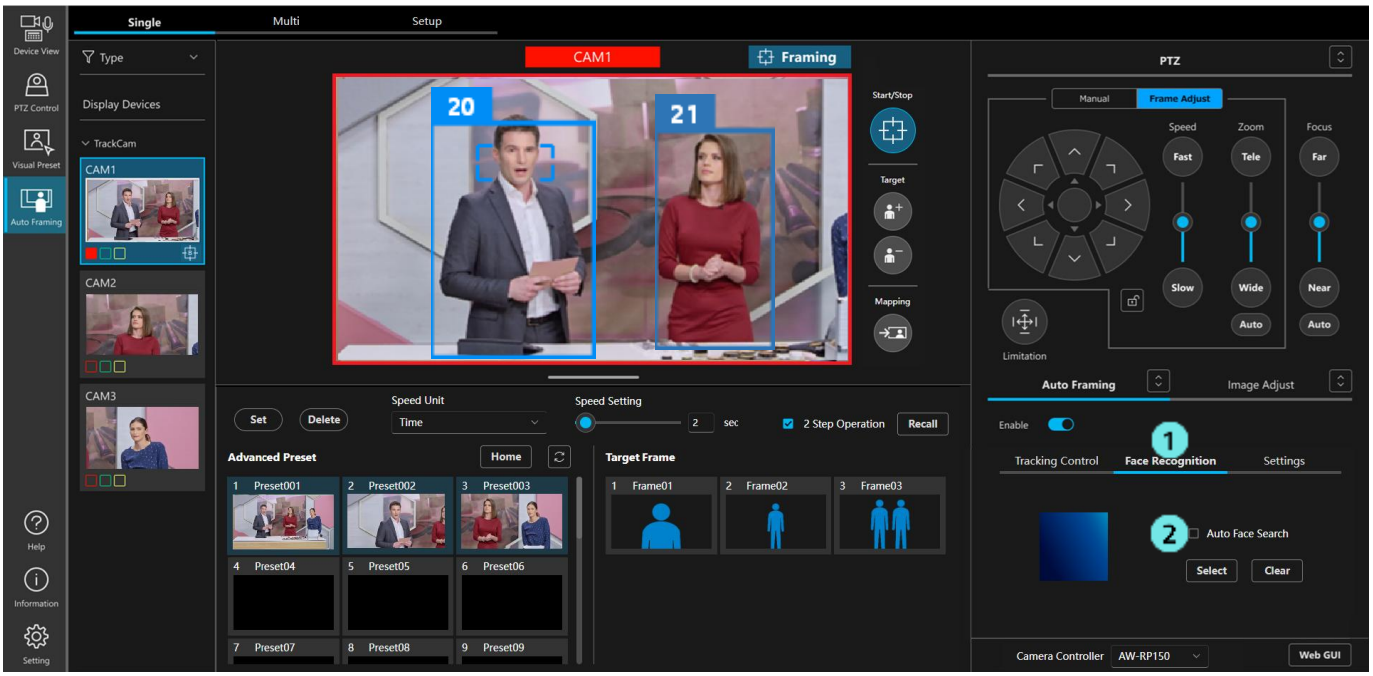
<NOTE>

- When text is entered into the search box in the top left of the selection screen, the faces displayed are filtered to those that contain the entered text.
- You can rearrange the faces by clicking and then dragging them.

4. Click the [OK] button to close the face selection screen.

■ Setting procedure to set all persons registered in the face database as the target

1. Select the Face Recognition tab in the Auto Framing tab.
2. Tick the [Auto Face Search] checkbox to turn auto face search ON.



■ Procedure for deselection of the specified target for facial recognition

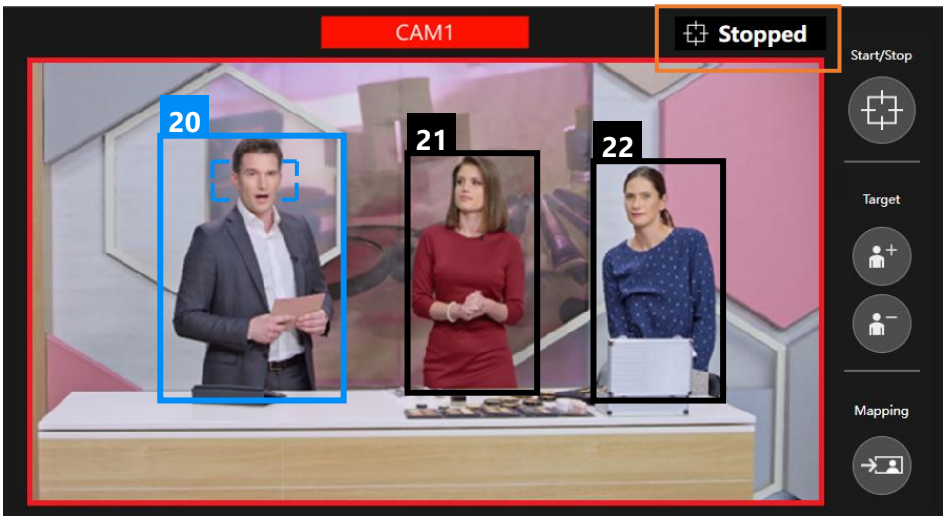
1. Select the Face Recognition tab in the Auto Framing tab.
2. Click the Clear button to clear the facial recognition target settings.

<NOTE>

- If Framing Processor: Built-in in Detail Setting of “Configure detailed settings” is selected, the facial recognition function cannot be used.

Check the auto framing status

The auto framing status can be checked by the display in the top right corner of the camera image display.



Camera control is stopped	: Stopped
Waiting to detect the framing target	: Searching
Framing is in progress	: Framing
The framing target is lost	: Lost

Operate the camera manually

You can operate a camera manually by selecting the Manual tab on the PTZ control panel and controlling the Pan/Tilt button and Zoom slider.

When the camera is operated manually, framing control of the camera will be suspended. To resume framing control of the camera, turn on the start/stop toggle button for auto framing operation again.

Perform camera preset operation

The preset for the PTZ camera can be registered and recalled.

Although the layout of the buttons, etc. differs, the procedure for registering and recalling is the same as for the PTZ Control function. Please refer to Perform Camera Preset Operation in the PTZ Control Operation Manual.

When registering a camera preset using this function, the framing settings at that time will be saved, linked to the camera preset. The composition of the saved framing settings will be displayed as human silhouettes on the thumbnail of the camera preset. When recalling a camera preset, the framing setting will also be recalled. In this case, the item to be recalled from the framing settings can be set in the Detail Setting. For more information, please refer to Detail Setting.

Framing settings saved/recalled linked to the camera preset:

- Preset Speed setting (Speed Unit and Speed Setting)
- Tracking Control tab settings (Composition status of Current Framing, Pan/Tilt Speed, Auto Zoom Speed, and Sensitivity)
- Status of toggle button to start/stop auto framing operation
- Auto Start Area settings
- Mask Area settings
- Face Recognition settings

<NOTE>

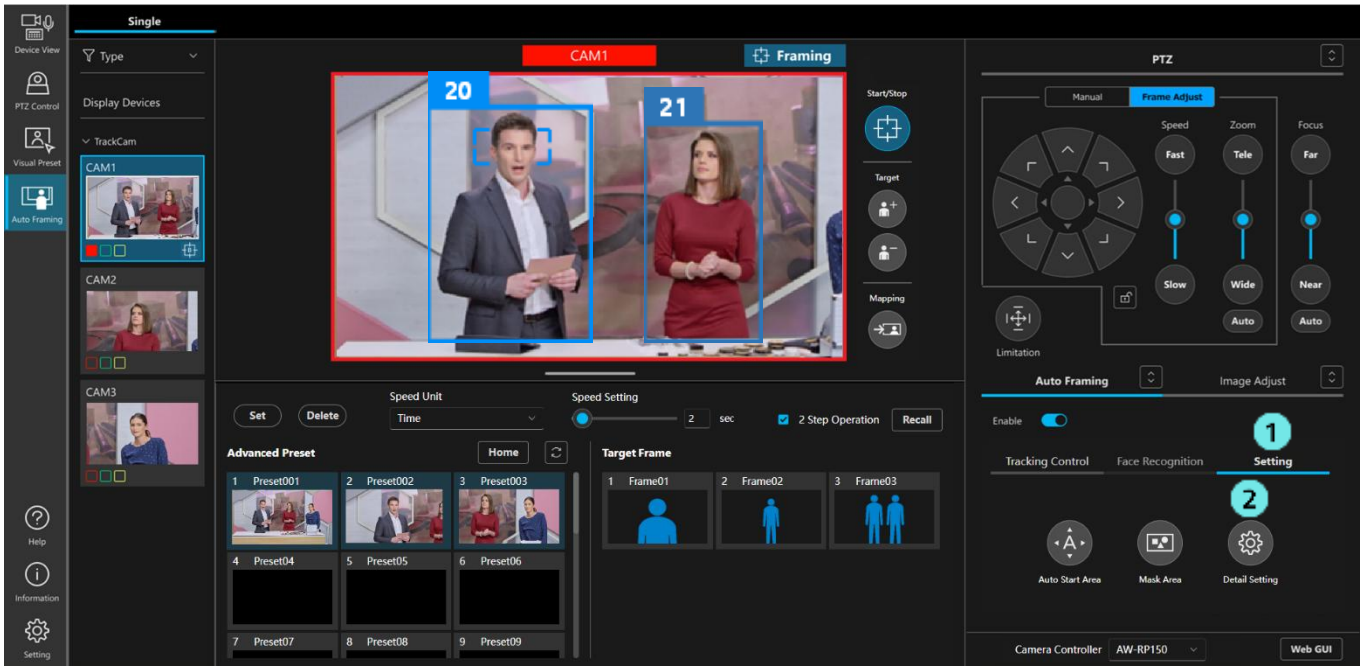
- Display of presets cannot be synchronized between this function and the PTZ Control function. To reflect presets registered or deleted on one function on the other, the other function must have its preset display updated.

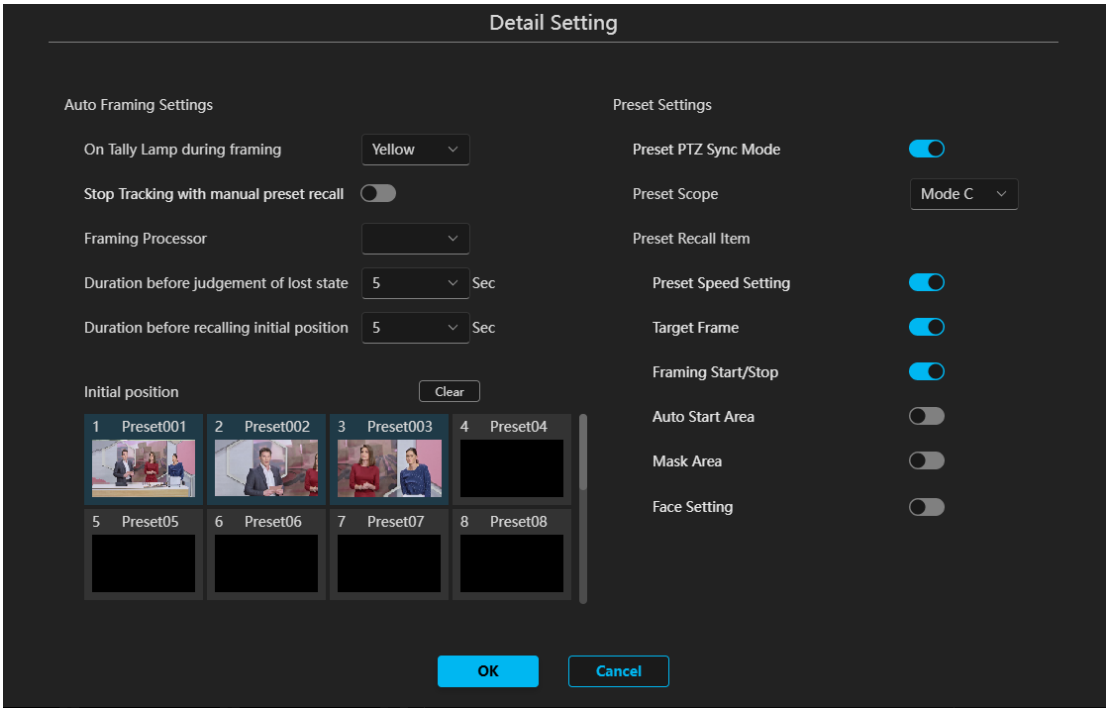
Configure detailed settings

Detailed settings can be made for the auto framing function.

Screen to make detailed settings is displayed in the following steps:

1. Select the Setting tab in the Auto Framing tab.
2. Click the Detail Setting button to display the screen of the Detailed settings.





■Auto Framing Setting items

- On Tally Lamp during framing

  Set the tally lamp status of the camera from the following for the set framing target when auto framing is in progress (when the status display is Framing) (Default for cameras that can use yellow: Yellow　Default for other cameras: Off)

  Off: No lighting

  Yellow: Yellow tally on　(Not displayed with unsupported models)

  Green: Green tally on

  Red: Red tally on

- Stop Tracking with manual preset recall

  Set if auto framing operation should be stopped when the camera preset is recalled manually (default: OFF)

  OFF: Do not stop auto framing operation

  ON: Stop auto framing operation

- Framing Processor

  Set whether to perform auto framing using the camera's built-in auto framing function or with GPU processing on the PC.

  (Default: blank)

  Blank: If space is available on your paid license, the GPU processing on the PC will be used. If there is no space available on your paid license, the camera's built-in auto framing function will only be used if it is available.

  Built-in: Use the camera's built-in auto framing function.

  PC_GPU: Use the GPU processing on the PC.

- Duration before judgement of lost state

  Set the time in seconds between losing the framing target and judging that the target is lost (default: 5 seconds)

- Duration before recalling initial position

  Set the time in seconds after the framing target is lost and judged as lost until the initial position is recalled (default: 5 seconds)

・ Initial position

Set the camera preset to be recalled after the framing target is lost and judged as lost (default: no setting)

By clicking any preset icon, the preset will be set as the Initial position. Clicking the Clear button will undo the setting.

■Preset Settings items

・ Preset PTZ Sync Mode

Set the ON/OFF setting for the Preset PTZ Sync Mode of the PTZ camera.

For information on the Preset PTZ Sync Mode, please refer to the operation manual of the PTZ camera.

・ Preset Scope

Set the Preset Scope of the PTZ camera.

For information on the Preset Scope, please refer to the operation manual of the PTZ camera.

・ Preset Recall Item

When a camera preset is recalled, this setting determines which linked and saved framing settings will be recalled. Only the items that are turned ON in this setting will be recalled.

- Preset Speed Setting (default: ON)

  Preset Speed settings (Speed Unit, Speed Setting)

- Target Frame (default: ON)

  Tracking Control tab settings (Composition status of Current Framing, Pan/Tilt Speed, Auto Zoom Speed, and Sensitivity)

- Framing Start/Stop (default: ON)

  Status of toggle button to start/stop auto framing operation

- Auto Start Area (default: OFF)

  Auto Start Area settings

- Mask Area (default: OFF)

  Mask Area settings

- Face Setting (default: OFF)

  Face Recognition settings

Auto Framing Operation (Multi-screen)

About multi-screen

Multi-screen has two operating modes.

1. Linking with a framing camera using a reference camera (reference camera operation)

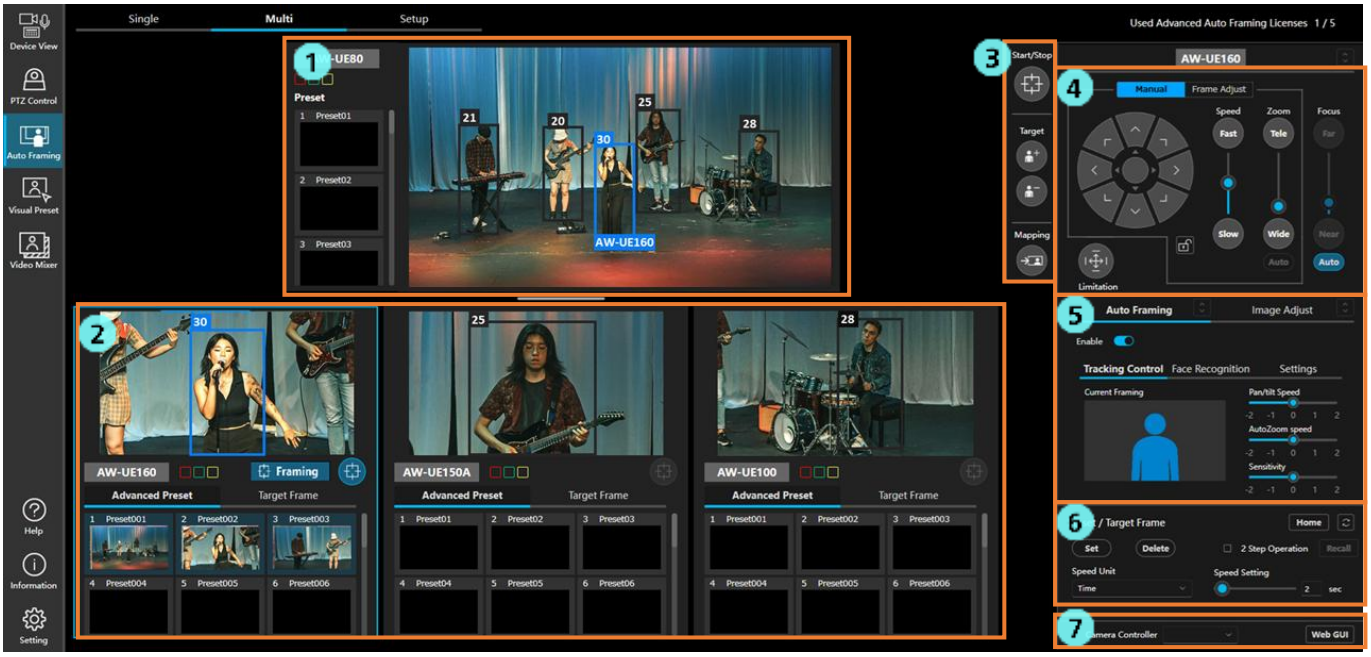
    For the features of reference camera operation, refer to “Reference camera linking”.

2. Use of framing cameras independently. This is the equivalent of single screen operation.

Before using multi-screen, you need to perform camera allocation and configure other settings.

If you have not configured the settings, configure them in reference to “Settings before Using Multi-screen”.

Explanation of multi-screen



1. Reference camera operation area

    This area displays a wide-angle view images from the reference camera, and is where reference camera operations are performed.

    If no reference camera has been allocated, this area displays images from the camera selected in the framing camera operation area.

2. Framing camera operation area

This is where framing camera images are displayed and operations are performed.

3. Auto Framing operation area

This is where framing is started/stopped, framing targets are added/deleted, and composition mapping is performed for the camera selected in the framing camera operation area.

4. PTZ operation area

This area is used to perform the Pan/Tilt/Zoom operation of the camera, and composition adjustment during auto framing.

5. Auto Framing/Image Adjust area

The settings of this function are adjusted from the Auto Framing tab, and the camera image quality is adjusted from the Image Adjust tab.

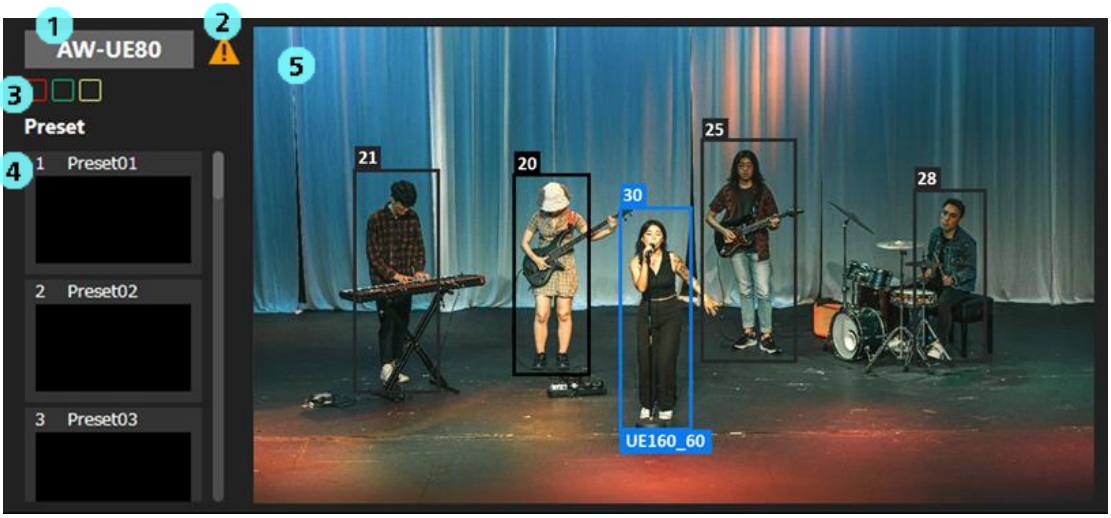
6. Camera preset/Target frame area

This area is used to manage the camera preset and the target frame (composition of auto framing).

7. Remote camera controller selection/Camera web interface display area

This area is used to perform target controller selection and to display the camera's web interface during remote camera controller linkage.

Explanation of reference camera operation area



1. Camera name display

Displays the name of the camera.

2. Warning display

Displays an icon when a warning occurs in the camera.

Click the icon to view details of the problem.

3. Tally lamp status display

Displays the tally lamp status of the camera.

4. Camera preset display

Displays the presets of the camera.

<NOTE>

- Up to 20 presets are displayed with this function.

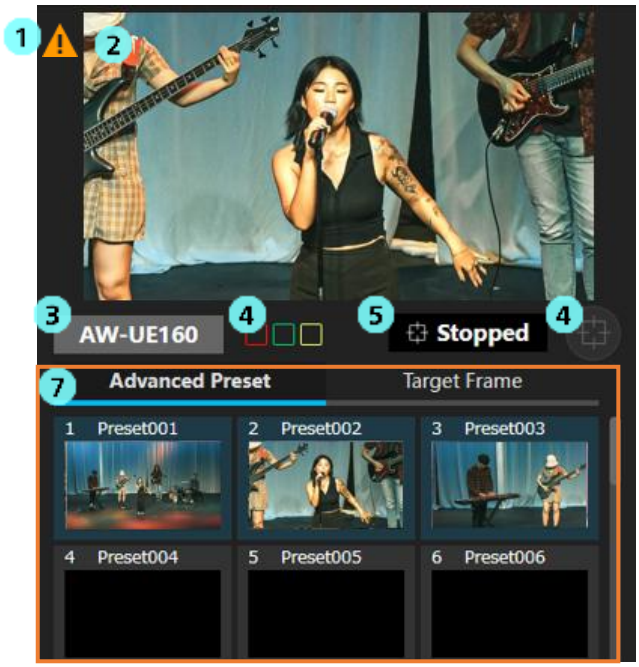
5. Camera image display

Displays the camera images.

If the auto framing function of any camera is switched on, a human body frame is displayed for the people detected in the camera image.

- The control number displayed above each human body frame allows you to identify the person. If a person is lost as a result of moving out of the screen and is then redetected, a different control number may be assigned even if the person is the same.
- When the face of a person specified with the facial recognition function is detected, the registered name of the person is displayed next to their control number.
- For the subject that is the target for framing by a framing camera, the name of the camera that is performing framing is displayed at the bottom of the detection area.

Explanation of the framing camera operation area



1. Warning display

   Displays an icon when a warning occurs in the camera.

   Click the icon to view details of the problem.

2. Camera image display

   Displays the camera images.

   If the auto framing function is switched on, a human body frame is displayed for the people detected in the camera image. The human body frame of the framing target is displayed in blue, and the human body frame of other than the framing target is displayed in black.

   - If face tracking auto-focus is active, a rectangle is displayed around the face that is the focus target.
   - The control number displayed above each human body frame allows you to identify the person. If a person is lost as a result of moving out of the screen and is then redetected, a different control number may be assigned even if the person is the same.
   - When the face of a person specified with the facial recognition function is detected, the registered name of the person is displayed next to their control number.

3. Camera name display

Displays the name of the camera.

4. Tally lamp status display

   Displays the tally lamp status of the PTZ camera.

5. Auto framing status display

   Displays the operation status of auto framing.

6. Toggle button for starting/stopping the auto framing operation

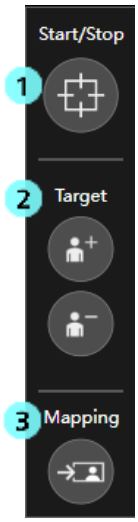
   Press the button to toggle between starting or stopping the auto framing operation.

7. Camera preset/Target frame area

   This area displays the camera presets and the target frame (composition of auto framing).

   The maximum number that can be displayed for both is 20.

Explanation of auto framing operation area



The operation target in this area is the camera selected in the framing camera operation area.

1. Toggle button for starting/stopping the auto framing operation

   Press the button to toggle between starting or stopping the auto framing operation.

   The function is the same as that in the framing camera operation area.

2. Add/Delete buttons for framing targets

   Use this button for adding or deleting framing targets.

   Displays the camera images.

3. Frame Mapping button

   Press this button to reflect the position and size of the framing target at the time of pressing the button in the current framing settings.

PTZ operation area

This area is used to perform the PTZ operation of the camera selected in the framing camera operation area. For details, refer to “Explanation of single screen” -> “PTZ operation area”, as the function is equivalent to that of the single-screen.

Auto Framing/Image Adjust area

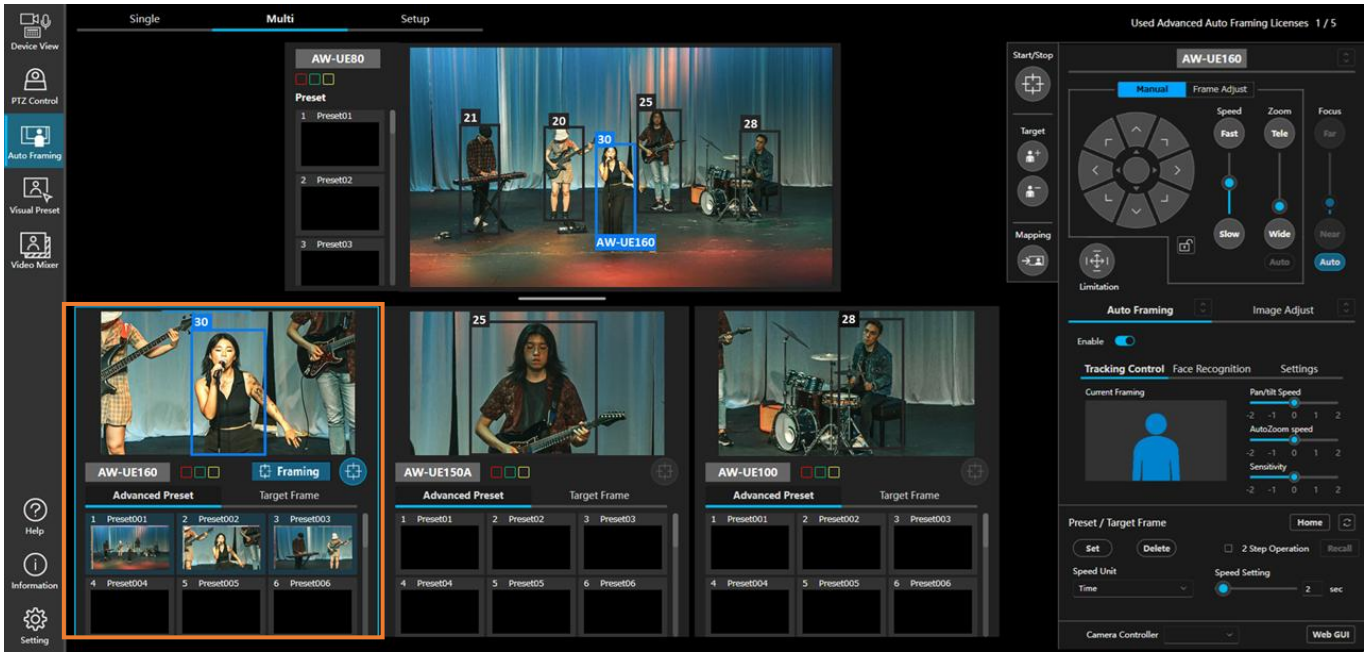
This area is used to perform the auto framing operation and image quality adjusting of the camera selected in the framing camera operation area. For details, refer to “Explanation of single screen” -> “Auto Framing/Image Adjust area”, as the function is equivalent to that of the single-screen.

Camera preset/Target frame area

This area is used to perform the preset/target frame operation of the camera selected in the framing camera operation area. For details, refer to “Explanation of single screen” -> “Camera preset/Target frame area”, as the function is equivalent to that of the single-screen.

Perform framing camera operation

Assigned framing cameras are displayed in the framing camera operation area in the lower part of the screen.
Up to three cameras can be displayed in the area. The display range can be changed using the horizontal scrollbar in the lower part of the area if four or more framing cameras are assigned.



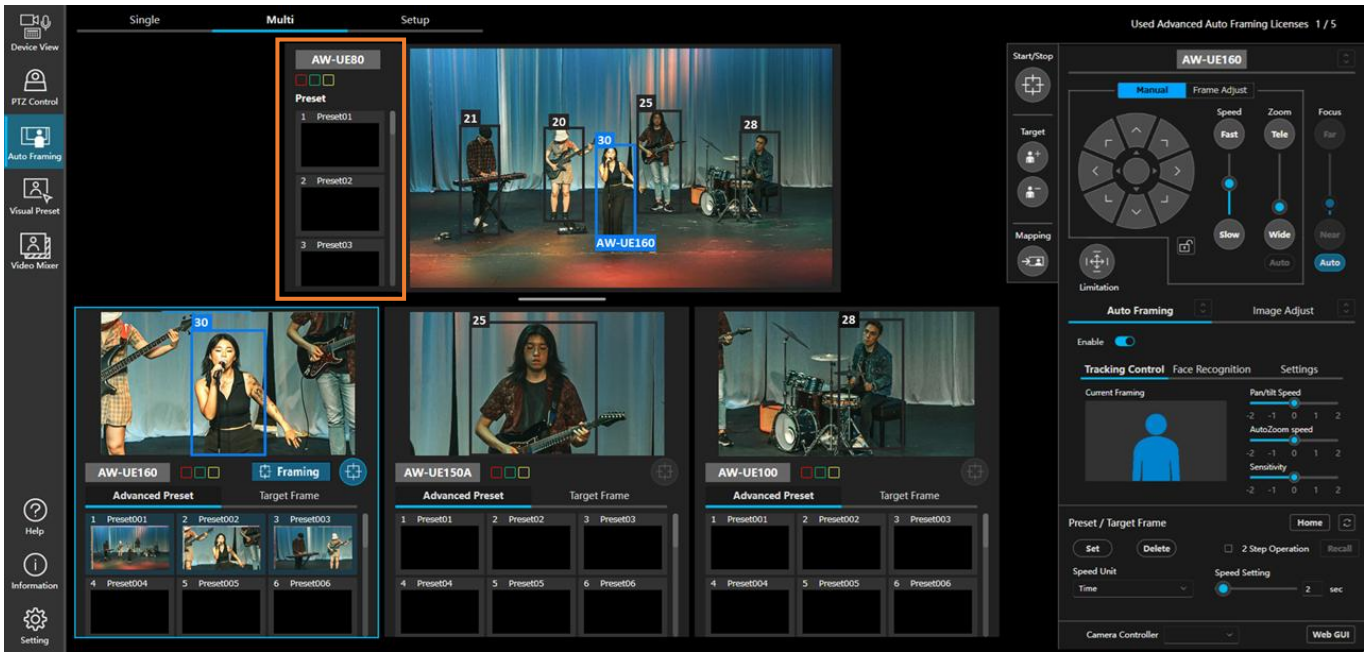
Follow the steps below to perform any of the framing camera operations.

1. Click and select the display area of the operation target camera (any locations within the orange frame when selecting the leftmost camera in the image above) (a blue frame appears in the display area).
2. Perform operations in each operation area on the right of the screen.

   For details, refer to “Auto Framing Operation (Single-screen)”, as the details of what can be performed in each operation are equivalent to those of the single-screen.

Perform reference camera operation

Assigned reference camera is displayed in the reference camera operation area in the upper part of the screen.



Follow the steps below to perform the reference camera operations.

1. Click and select the display area of the reference camera other than the video display (any locations within the orange frame in the image above) (a blue frame appears in the display area).
2. Perform operations in each operation area on the right of the screen.

   For the reference camera, only the following operations are available.

   - PTZ operation area

     Pan/Tilt/Zoom, Focus, Limitation operations in the Manual tab
   - Auto Framing/Image Adjust area

     Mask Area, Detail Settings in the Auto Framing -> Settings tab

     Image adjustment operation in the Image Adjust tab
   - Camera preset/Target frame area

     Camera preset operation

Reference camera linking

Reference camera linking is a function that captures images by linking a reference camera that captures bird's eye view images and individual framing cameras. If the reference camera is on in the Setup screen, reference camera linking is always enabled.

This section explains the benefits of using reference camera linking.
For conditions of use of reference camera linking, refer to "Conditions of use of reference camera linking", and for reference camera linking operation, "Operation of reference camera linking".

■Benefits of using reference camera linking

Reference camera linking enables the following operations, allowing to perform auto framing operations more smoothly.

1. You can point the camera at a subject outside of the framing camera angle of view

   Clink the subject on the video of the reference camera to point the framing camera at where the subject is even though it is outside of the framing camera angle of view.
   This allows you to switch the framing targets smoothly.

2. You can add a subject outside of the framing camera angle of view as a framing target

   When adding a framing target, you can add a subject from the image of the reference camera.
   This allows you to easily add a subject outside of the framing camera angle of view as a framing target.

3. Easy to recover when the framing camera loses its target

   Even when the framing camera loses its target, you can easily resume framing because you can point the framing camera at where the subject is by clicking the subject on the video of the reference camera.

4. Target can be auto-selected based on facial recognition information from other linked cameras.

   Reference camera linking shares face recognition information between linked cameras. When the face selected in the first framing camera is recognized by the reference camera or other framing cameras, the subject can be captured as a target even though it is outside of the angle of view of the first framing camera.

Conditions of use of reference camera linking

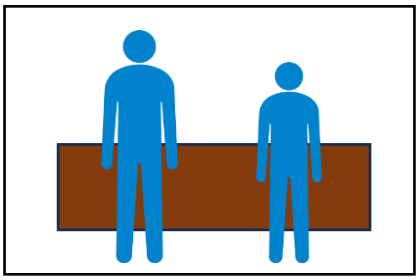
To improve the accuracy of reference camera linking, the installation position of the camera and shooting environment must meet the following conditions.
Reference camera linking can be used even if the conditions are not met, though, it may result in behavior such as the framing camera not moving to the position of the subject accurately when you click it on the reference camera.

■Camera installation position

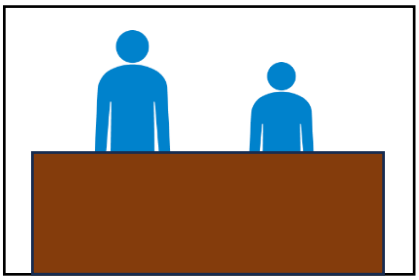
- For details, refer to “Settings before Using Multi-screen” and perform camera calibration.
- When the position or height of the camera has changed after camera calibration, it needs to be calibrated again.
- If there are areas where you don’t want to capture, set pan/tilt limit on framing cameras.

• Conditions of use of reference camera

- Make sure that the feet of the subject are captured by the reference camera as it estimates the position of the subject based on its feet.



OK

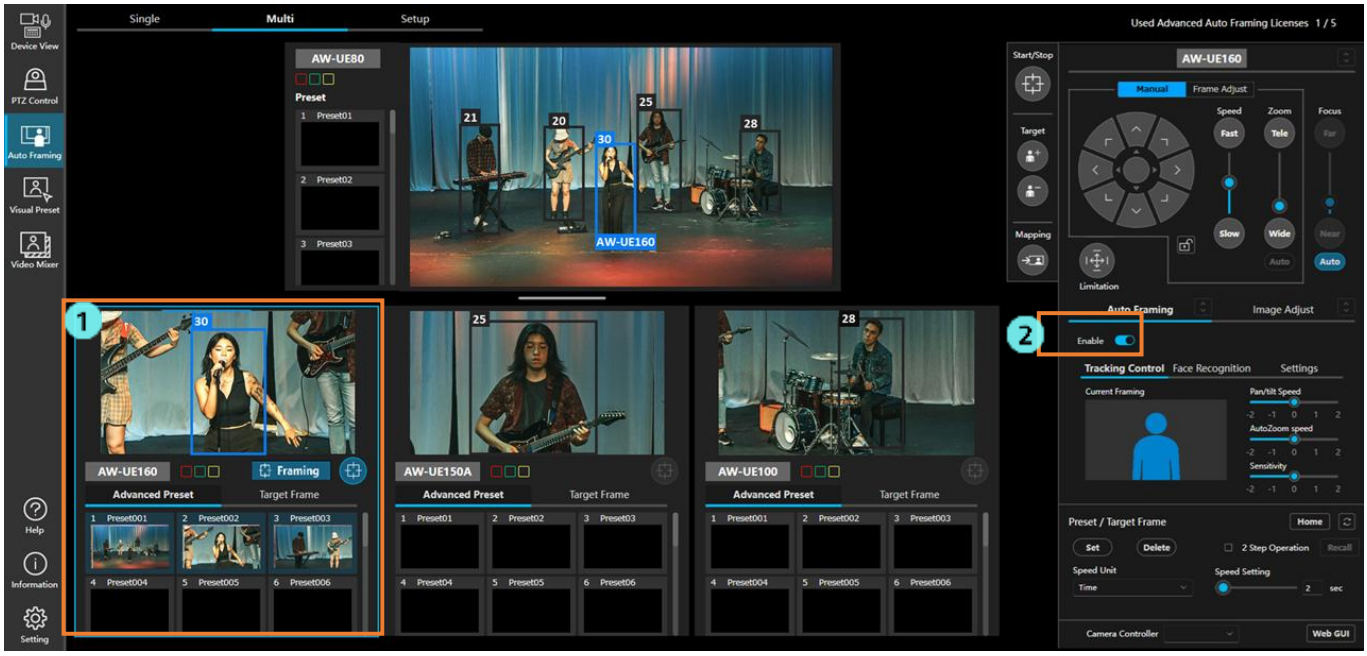


NG

Operation of reference camera linking

Follow the steps below to perform reference camera linking.

1. Click and select the display area of the framing camera to be used (a blue frame appears in the display area).
2. Select the [Auto Framing] tab in the operation area on the right of the screen and turn ON the Enable button.
   The auto framing function of a camera is switched ON and human detection begins. At the same time, human detection also begins on the reference camera.
3. Perform the above steps 1. and 2. for all framing cameras to be used.



4. Perform operations on the video of the reference cameras depending on the shooting conditions.

   Below is an explanation of the procedure for each condition.

■Specify a framing target of a framing camera on the video of the reference camera

You can specify a target of framing of a framing camera on the video of the reference camera.

When a target is specified on the video of the reference camera, the framing camera will turn to face the direction of the target automatically so that framing can be started by capturing the target even when it is outside of the framing camera angle of view.

1. Click the framing camera operation area and select a framing camera to perform framing.
2. Turn OFF both Add/Delete buttons for framing targets.
3. Click the person to be a framing target on the video of the reference camera.
4. The framing camera turns to face the direction of the target automatically, and framing begins.

Example of specifying the leftmost person on the video of the reference camera as a framing target.

■Change the framing target of the framing camera on the video of the reference camera

You can change the framing target on the video of the reference camera while the framing camera is framing. Same as when specifying a framing target, when a target is specified on the video of the reference camera, the framing camera will turn to face the direction of the target automatically so that framing can be started capturing the target even when it is outside of the framing camera angle of view.

1. Click the framing camera operation area and select a framing camera to change the target.
2. Turn OFF both Add/Delete buttons for framing targets.
3. Click the person to be a new framing target on the video of the reference camera.
4. The framing camera turns to face the direction of the target automatically, and framing begins.

Example of changing the framing target to the rightmost person on the video of the reference camera.

■Add/delete a framing target of a framing camera on the video of the reference camera

You can add/delete a framing target on the video of the reference camera while the framing camera is framing. Especially when you want to change from framing targeted at one person to one targeted at a group of two or more people, you can easily add targets that are outside of the framing camera angle of view, making the change smooth.

1. Click the framing camera operation area and select a framing camera to add/delete the target.
2. Turn ON one of the Add/Delete buttons for framing targets.
3. Click the person to be added/deleted on the video of the reference camera.
4. The framing camera starts framing so that all framing targets are within the camera's angle of view.

Example of adding the rightmost person on the video of the reference camera as a framing target.

Settings before Using Multi-screen

Settings required before using Multi-screen

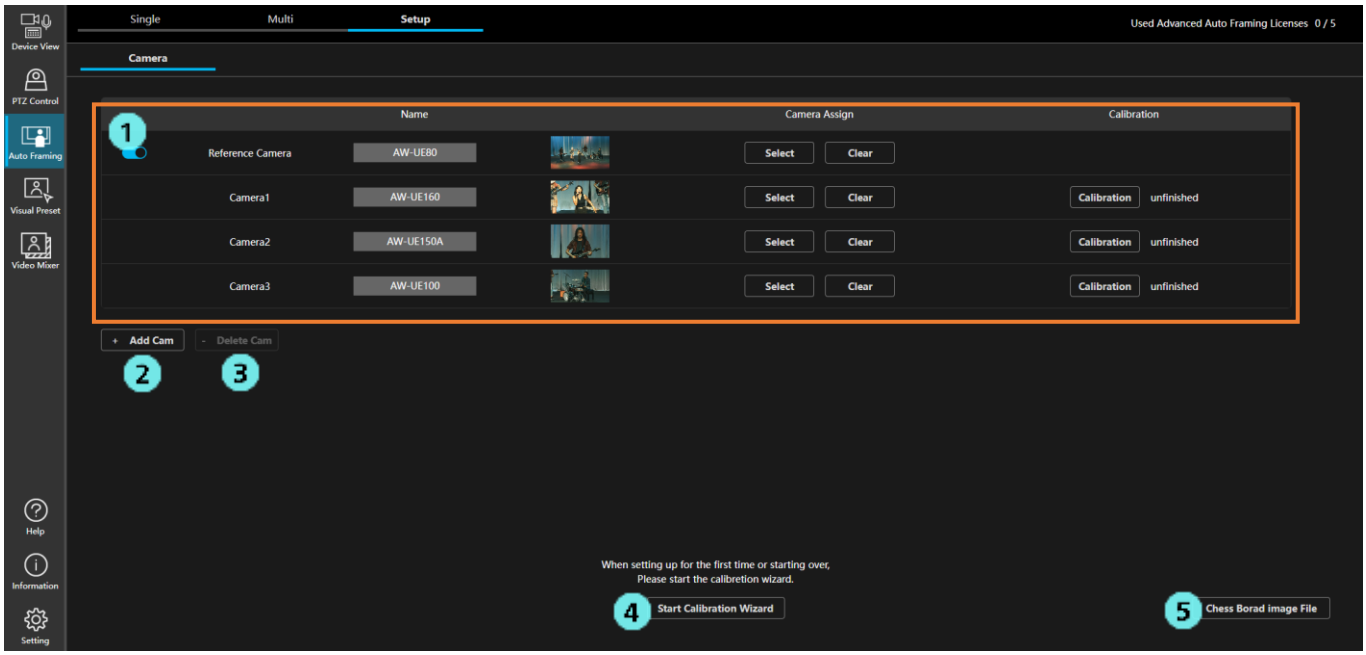
Following settings are required in advance to use Multi-screen.

- Assign cameras to be used.
- Calibrate the reference camera (when using the reference camera) and framing cameras

Settings are configured in the Setup tab.

Below is an explanation of the screen and pre-configuration procedures.

Setup screen



1. Camera assignment setting area

   Set assignment of the reference camera and framing cameras.

2. Add Cam button

   Click the button to add a framing camera assignment row in the camera assignment setting area. You can add up to Camera6.

3. Delete Cam button

   Click the button to delete a framing camera assignment row in the camera assignment setting area. Camera1 to 3 cannot be deleted.

4. Start Calibration Wizard button

   Click the button to start calibrating between the reference camera and framing cameras. ・For details, refer to “Camera Calibration (2) Procedure”.

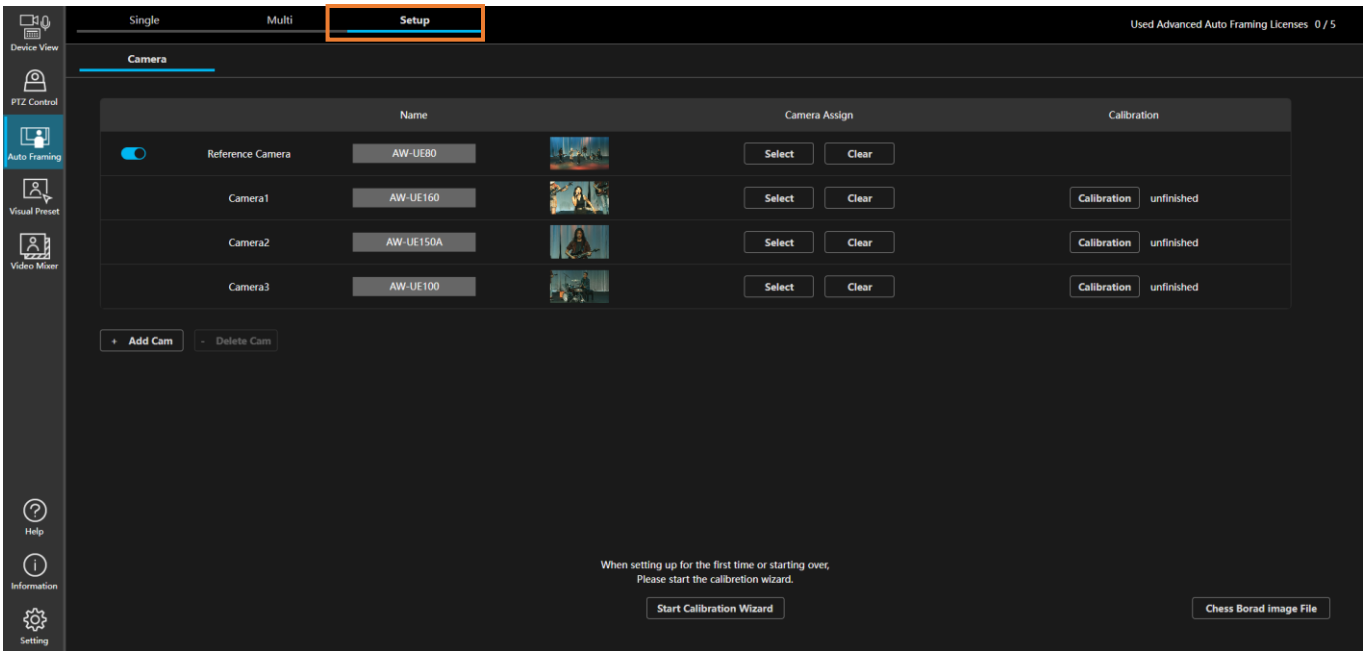
5. Checker Board image File button

Click the button to download a checkerboard image PDF file to use for calibration. ・For details, refer to "Camera Calibration (2) Procedure".

Assign cameras to be used

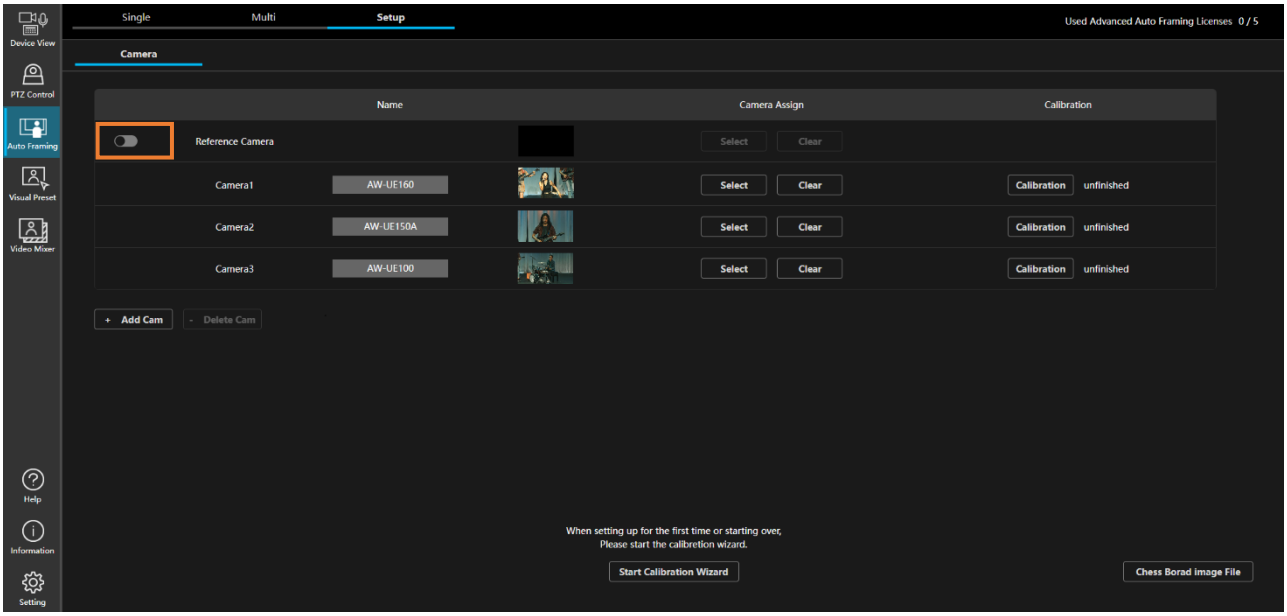
Camera settings are configured in the Setup tab.

Click the Setup tab at the top of the screen to display the Setup screen.



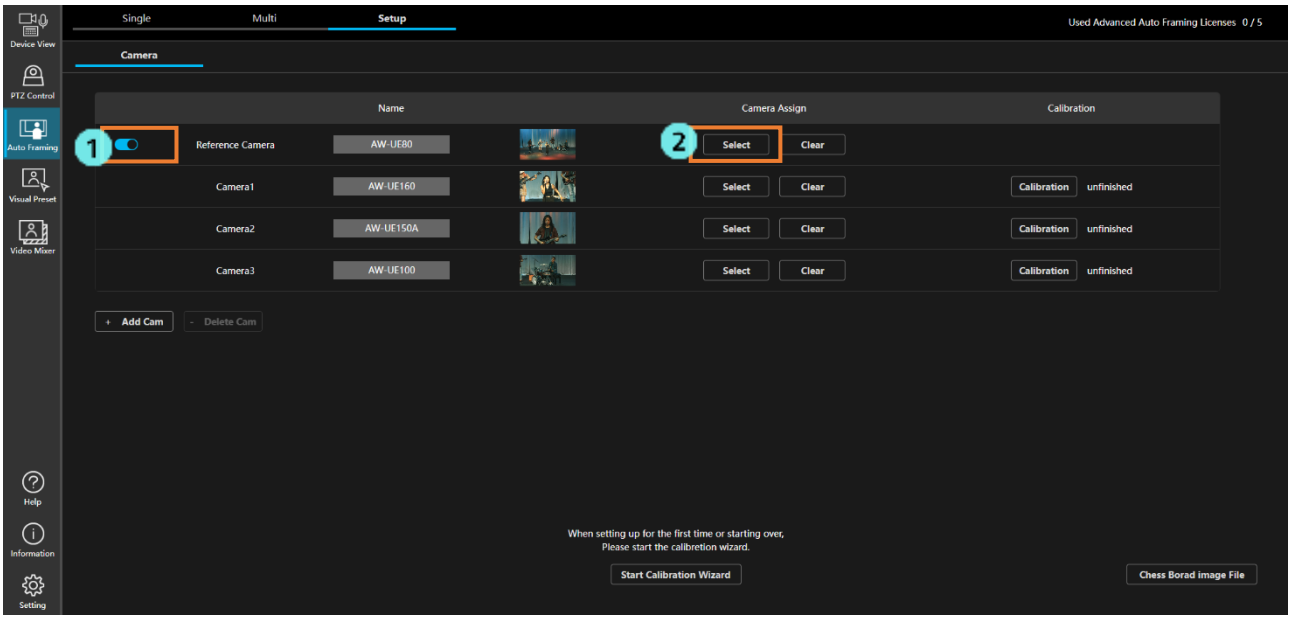
■Assigning the reference camera

・When the reference camera is not used



Turn OFF the button at the left end of the Reference Camera row in the camera assignment setting area.

・When the reference camera is used



1. Turn ON the button at the left end of the Reference Camera row in the camera assignment setting area.
2. Click the Select button of the Reference Camera row.
3. When the camera selection screen appears, select the camera to be used as the reference camera and click the OK button.

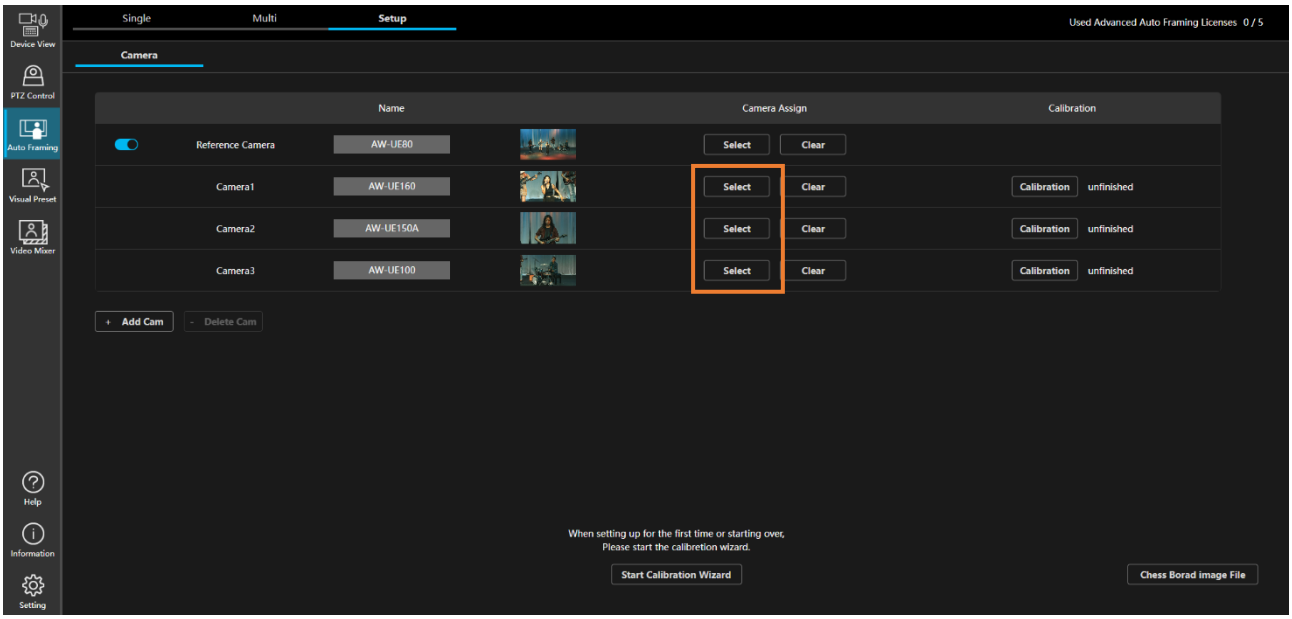
<NOTE>

・You can unassign it by clicking the Clear button on the right side of the Select button.

・The camera selected as the reference camera cannot use the auto framing function on the Single-screen when the button in the step 1. above is ON. Turn OFF the button in the step 1. when using it for framing.

・The cameras selected in Camera1 to 6 will operate as PC_GPU regardless of the set value of the Framing Processor in the Detail Setting in “Configure detailed settings”.

■Assigning framing cameras



1. Click the Select button of the framing camera display rows (second and subsequent rows) in the camera assignment setting area.
2. When the camera selection screen appears, select the camera to be used as framing cameras and click the OK button.

<NOTE>

- You can register up to six framing cameras.
  Initially, there are three framing camera display rows, so if you want to register a fourth camera or more, click the Add Cam button in the lower left of the camera assignment setting area to add display rows. If the added display row is no longer necessary, it can be deleted with the Delete Cam button at the right of the Add Cam button.
- You can unassign it by clicking the Clear button on the right side of the Select button.

You can rearrange the framing camera display rows by dragging them.

Camera Calibration (1) Overview

Calibration to obtain positional relationship between the reference camera and each framing camera is required when using the reference camera.

This section provides the overview of calibration.

For information on how to perform calibration, refer to "Camera Calibration (2) Procedure".

■Camera installation position of and shooting environment

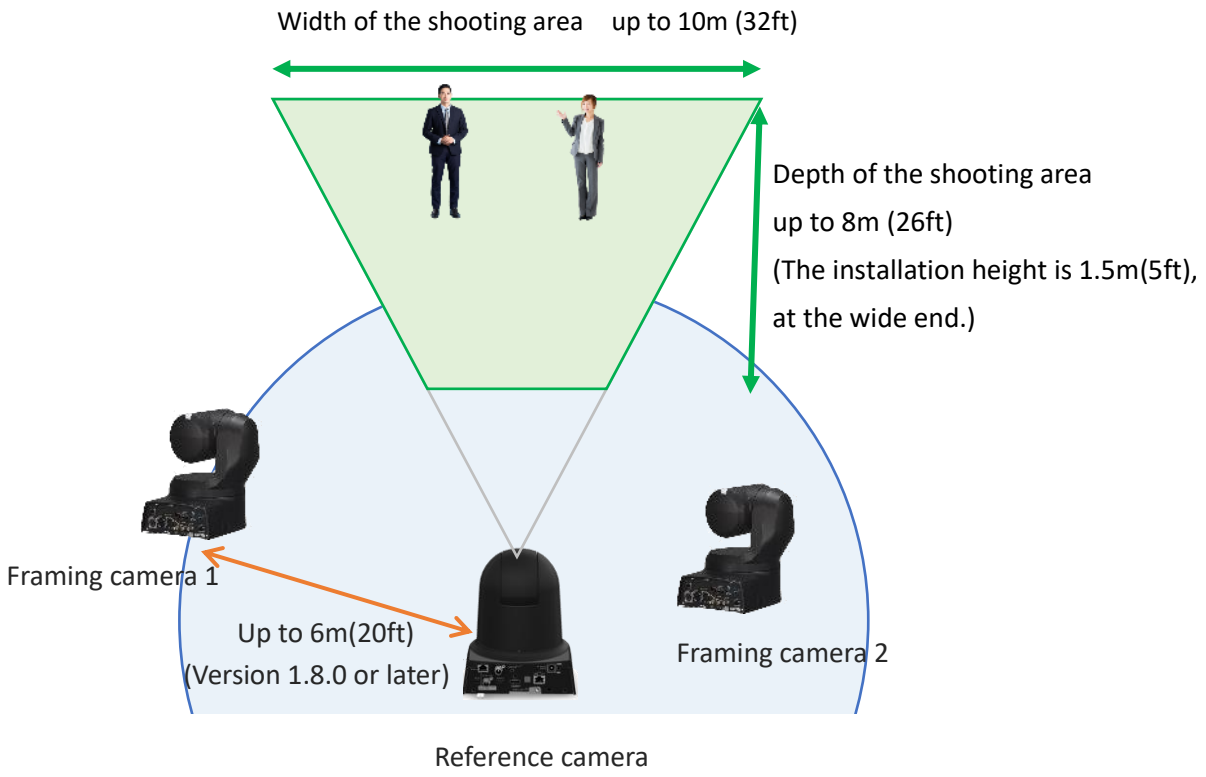
・All cameras should be installed horizontally.

・The reference camera should be installed at least 1.0 m(3.2ft) above the floor where the subject stands.

・It is recommended that the framing camera be installed within 6m(20ft) of the reference camera.

・The shooting space where reference camera linking can be used depends on the installation height of the reference camera.

The following camera installation position is typically recommended.



<NOTE>

- In areas where the width of the shooting area is wider than 10m, people may not be detected because their size in the reference camera image will be small.
- The depth of the shooting area will be wider the higher the reference camera is installed and the greater the downward tilt.
- As long as the framing camera is tracking the subject, framing will continue even if the subject moves outside the shooting area of the reference camera.

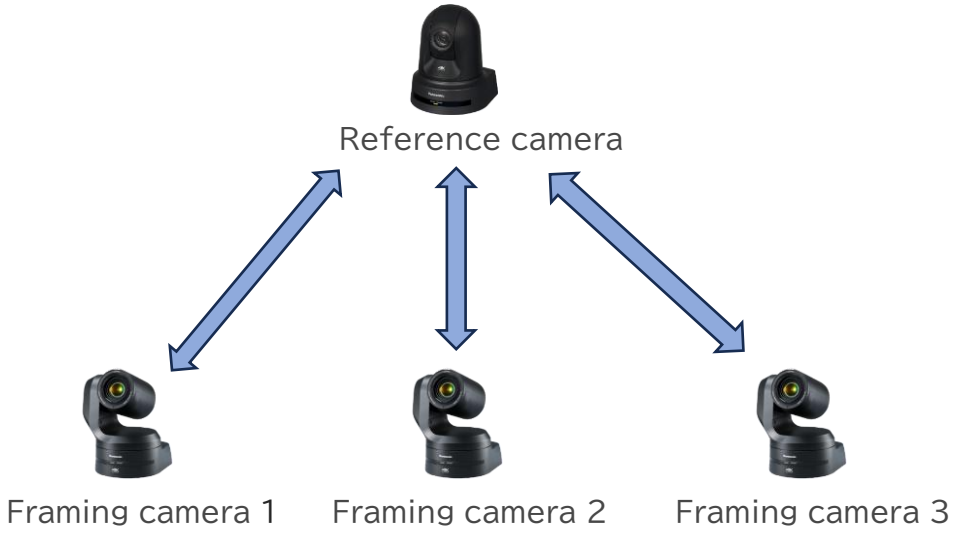
■Required steps for calibration

The following steps are required for calibration.

- Acquisition of reference camera height information
- Acquisition of positional relationship between the reference camera and each framing camera

E.g.: The required steps for the camera configuration in the image below

1. Acquisition of reference camera height information
2. Acquisition of positional relationship between the reference camera and the framing camera 1
3. Acquisition of positional relationship between the reference camera and the framing camera 2
4. Acquisition of positional relationship between the reference camera and the framing camera 3



■Types of calibration

The following two types are available for calibration.

- Whole calibration

  Calibrates between the reference camera and all framing cameras.

  (In the example above, perform all steps from 1. to 4.)

- Separate calibration

  Calibrates only between the reference camera and specific framing cameras.

  (In the example above, perform only step 2., 3., or 4.)

■Conditions that require calibration

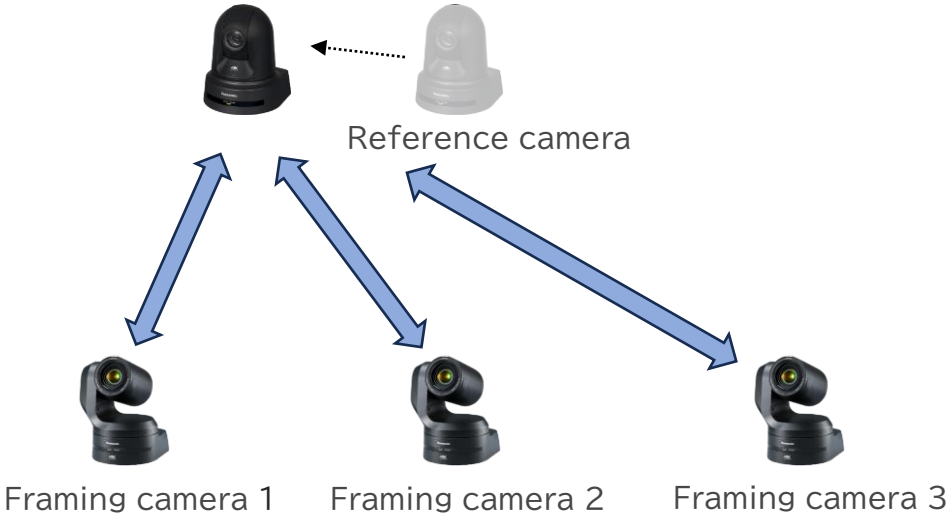
Conditions that require calibration are as follows.

- The first time a reference camera and framing cameras are assigned,
  or when the reference camera is changed to another camera.

  Whole calibration should be performed.

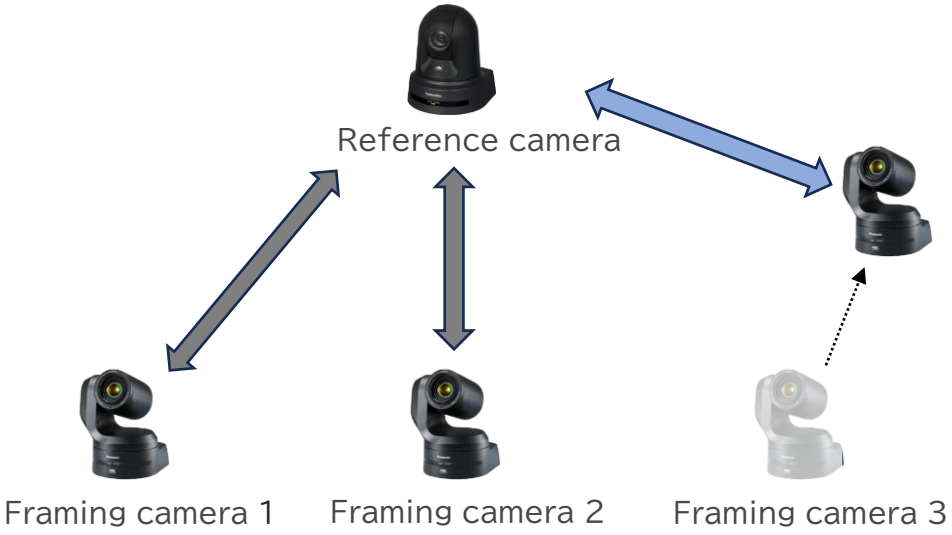
- When the installation position of the reference camera (physical position/height) is changed

Whole calibration should be performed again.



- When the installation position of a specific framing camera (physical position/height) is changed, or a framing camera is added

Separate calibration should be performed only for the changed/added framing camera.



Camera Calibration (2) Procedure

The process of calibration is as follows.

Perform all steps 1. to 6. for the whole calibration. Perform only steps 4. and 5. for the separate calibration.

1. Prepare a checkerboard image (pattern consisting of black and white rectangles)
2. Enter the size of the rectangles of the checkerboard image
3. Set the reference camera height

   (Manually enter the height or automatically detect it by capturing the checkerboard with the reference camera)
4. Measure the positional relationship between the reference camera and a framing camera by capturing the checkerboard image simultaneously

   (Automatically detect it by capturing the checkerboard)
5. When the calibration result is visualized, check if there are any problems

   If there are any problems, return to the step 4. and capture the checkerboard again.
6. Repeat the steps 4. and 5. for all framing cameras

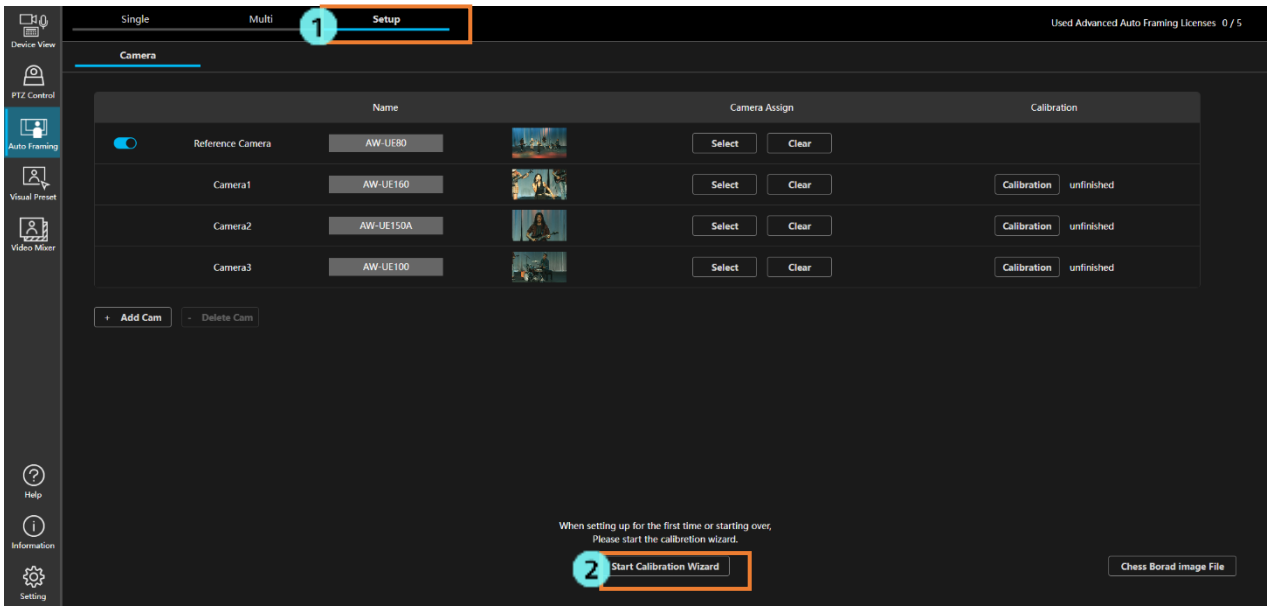
Install all cameras in the position for the actual shooting before calibrating.

<NOTE>

To improve the accuracy of reference camera linking, the installation position of the cameras and shooting environment must meet the specified conditions. For details, refer to “Camera Calibration (1) Overview”.

• Whole calibration procedure

1. Click the Setup tab at the top of the screen to display the Setup screen.
2. Click the Start Calibration Wizard button at the bottom of the screen to start whole calibration.



3. If you don’t have a checkerboard image, obtain one following the steps (1) and (2) below.

If you already have one, click the Next button at the bottom of the screen and proceed to the next step 4.

(1) Click the Checker Board PDF File button in the middle of the screen.

A checkerboard image PDF file (MPS_CalibrationChart.pdf) will be downloaded.

(It will be saved in the folder set as the download location in your browser)

(2) Open the checkerboard image PDF file and print it on a piece of paper.

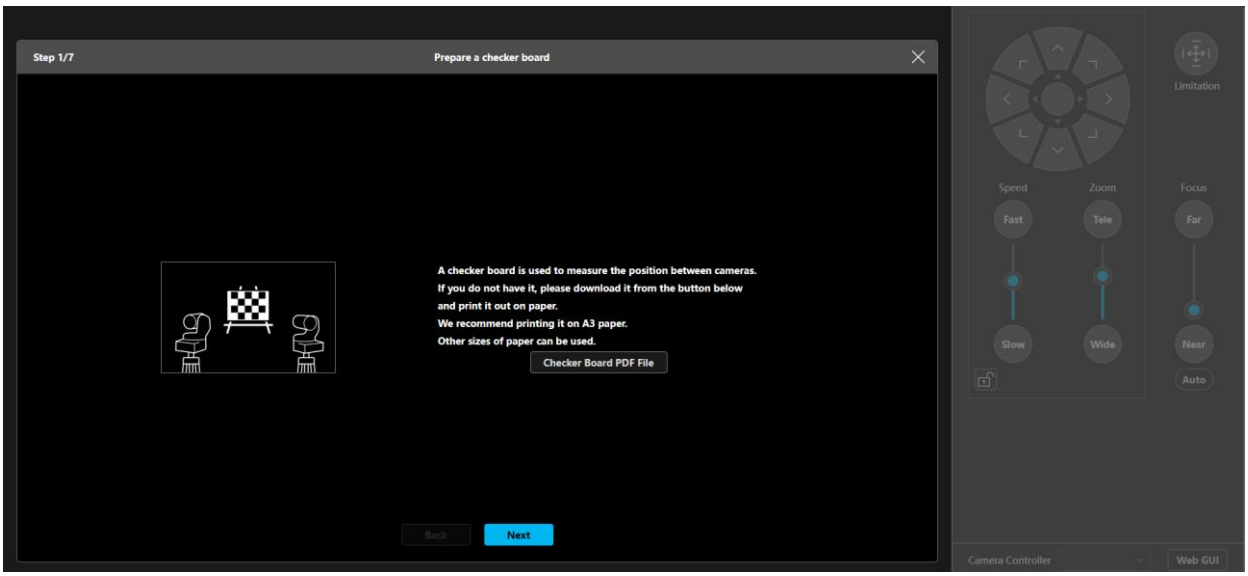
When printing, the following print settings are recommended.

Paper size: A3 or tabloid

Magnification: 100%

If the checkerboard is printed on A3 (tabloid), calibration is possible up to 7m away from the camera. If the checkerboard is printed on smaller paper, the calibration distance will be shorter.

(3) When the printing is complete, click the Next button at the bottom of the screen and proceed to the next step 4.



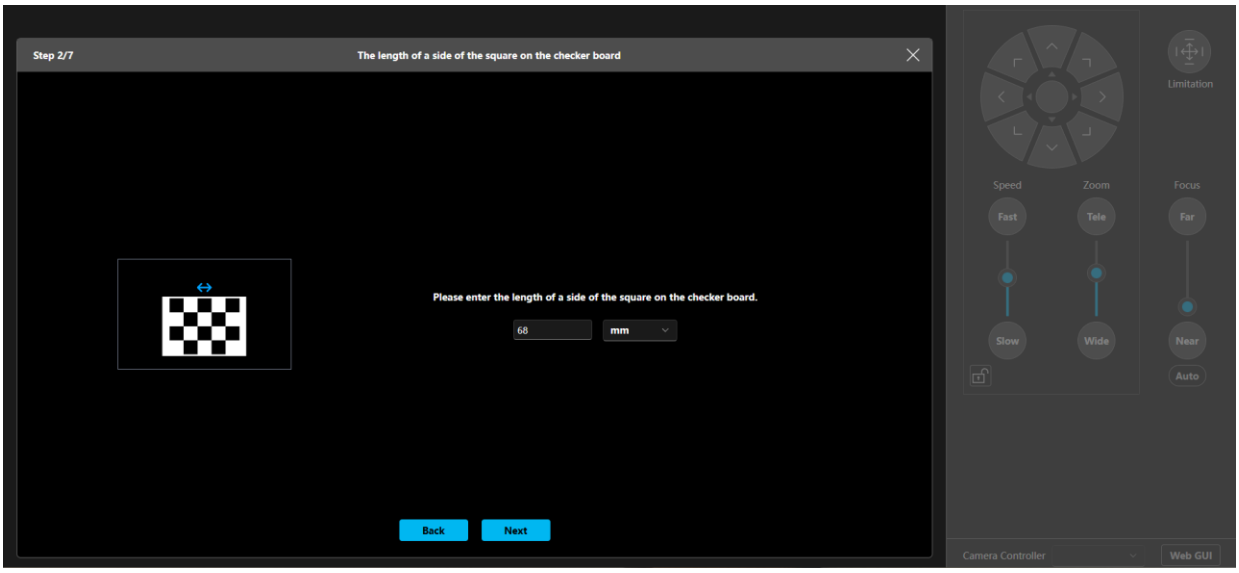
4. The screen for entering the size of the rectangles of the checkerboard image is displayed.

Enter the length of a rectangle of the printed checkerboard image in the enter box in the middle of the screen.

The size can be either in mm or inches.

*If the checkerboard image was printed to the recommended paper size at the recommended magnification in the step 3, no need to change the initial value.

Once you have entered the size, click the Next button at the bottom of the screen and proceed to the next step 5.



5. The screen to set the height of the reference camera appears.

The following two methods are available for setting it.

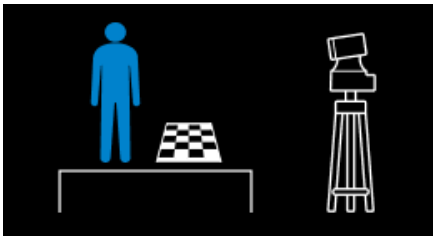
・Automatically detect the height by capturing the checkerboard placed on the floor with the reference camera

・Measure the height from the floor to the reference camera and enter the value manually.

■Procedures for automatic height detection

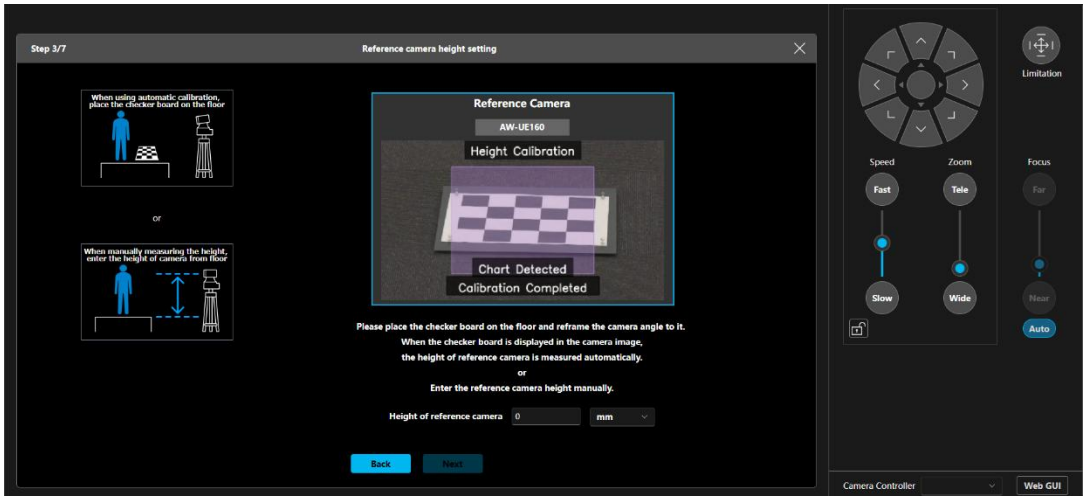
(1) Place the checkerboard image on the floor.

*If the height of the floor where the camera is installed and where the subject stands are different, place the checkerboard image on the floor where the subject stands as shown in the image below.



(2) Capture the checkerboard image with the reference camera.

The checkerboard image must be captured in a way that it fits within the rectangle in the middle of the camera image at a certain size or larger.



(3) Operate the camera using the Pan/Tilt/Zoom controls on the right side of the screen to capture the

checkerboard.

When the checkerboard image is recognized, the camera automatically adjusts its position to the point where the automatic height detection is possible.

NOTE: If the checkerboard is located too far away from the camera and is not large enough even at the zoom telephoto end, it may be possible to calibrate the camera by enabling the Digital Extender (x1.4, x2.0) on the camera.

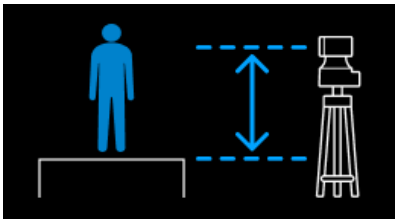
(4) After the checkerboard image is correctly detected and the automatic height detection is completed, the message “Calibration Completed” is displayed on the camera image.

After confirming that the height has been automatically set in the Height of reference camera field at the bottom of the screen, click the Next button at the bottom of the screen and proceed to the next step 6.

■Procedures for measuring and entering the height manually

(1) Measure the height from the floor to the center of the lens when the camera is facing straight ahead.

*If the height of the floor where the camera is installed and where the subject stands are different, measure the height from the floor where the subject stands as shown in the image below.



(2) Enter the measured height in the Height of reference camera field at the bottom of the screen.

The size can be either in mm or inches.

(3) Click the Next button at the bottom of the screen and proceed to the next step 6.

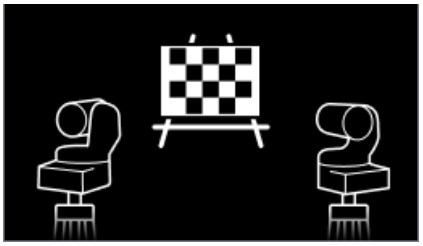
6. The screen to measure the positional relationship between the reference camera and framing cameras is displayed.

In this screen, the reference camera and the framing camera capture the checkerboard image simultaneously to detect the positional relationship automatically.

(1) Place the checkerboard image in a middle position where it can be captured by both reference and framing cameras.

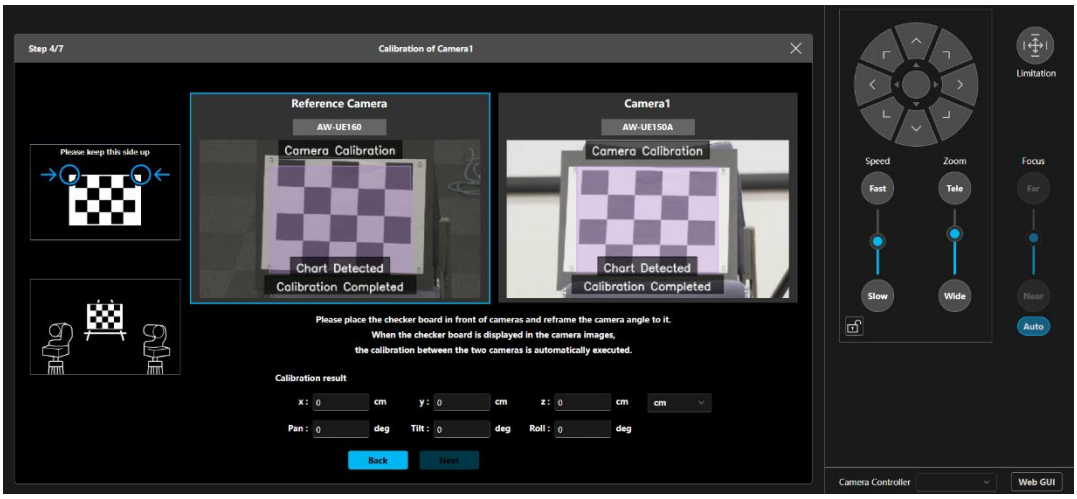
*Place the checkerboard so that it is perpendicular to the floor and faces the camera. You can change the checkerboard placement for each framing camera.

*Place it so that both upper left and upper right corners are black rectangle.



(2) Capture the checkerboard image with both the reference and framing cameras.

The checkerboard image must be captured in a way that it fits within the rectangle in the middle of the camera image at a certain size or larger with both cameras.

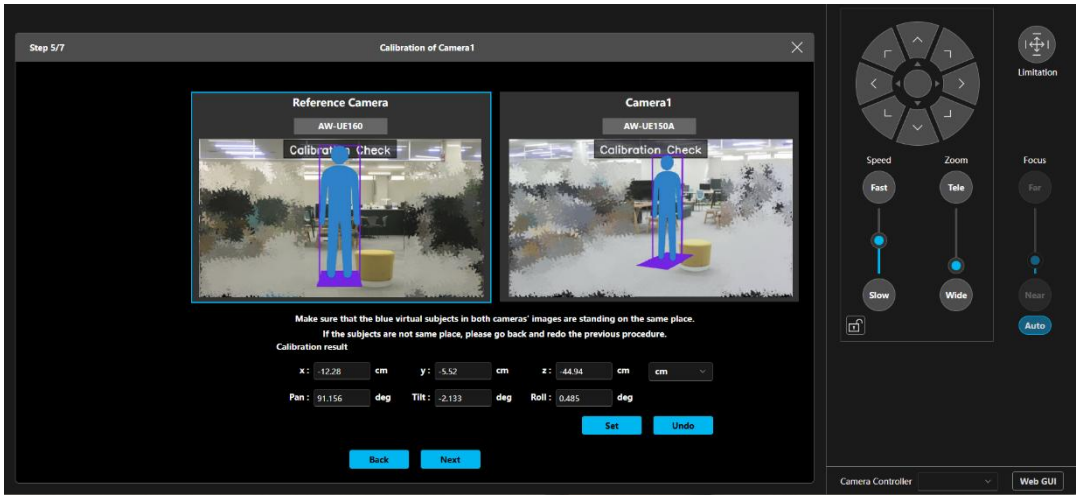


(3) You can operate the selected camera by performing operation from the Pan/Tilt/Zoom operation area of it on the right of the screen after clicking and selecting the image display area of it (a blue frame appears).
Operate the camera so that the checkerboard image is captured.
When the checkerboard image is recognized, the camera automatically adjusts its position to the point where the automatic positional relationship detection is possible.
Operate the cameras so that the checkerboard image is recognized by both reference and framing cameras.
NOTE: If the checkerboard is located too far away from the camera and is not large enough even at the zoom telephoto end, it may be possible to calibrate the camera by enabling the Digital Extender (x1.4, x2.0) on the camera.

(4) After the checkerboard image is correctly recognized by both reference and framing cameras, the message "Calibration Completed" is displayed at the bottom of both camera images.
After confirming that the value has been automatically set in the Calibration Result field at the bottom of the screen, click the Next button at the bottom of the screen and proceed to the next step 7.

7. The screen to confirm the calibration result appears.
In this screen, confirm the position of the person icon displayed on the image of both reference and framing cameras and check if there are any problems with the result.

(1) The person icon is displayed on the image of both reference and framing cameras.



(2) Confirm that the person icon displayed on each image is standing up straight in almost the same position of the

floor.

- When the person icons are standing up straight in almost the same position of the floor.

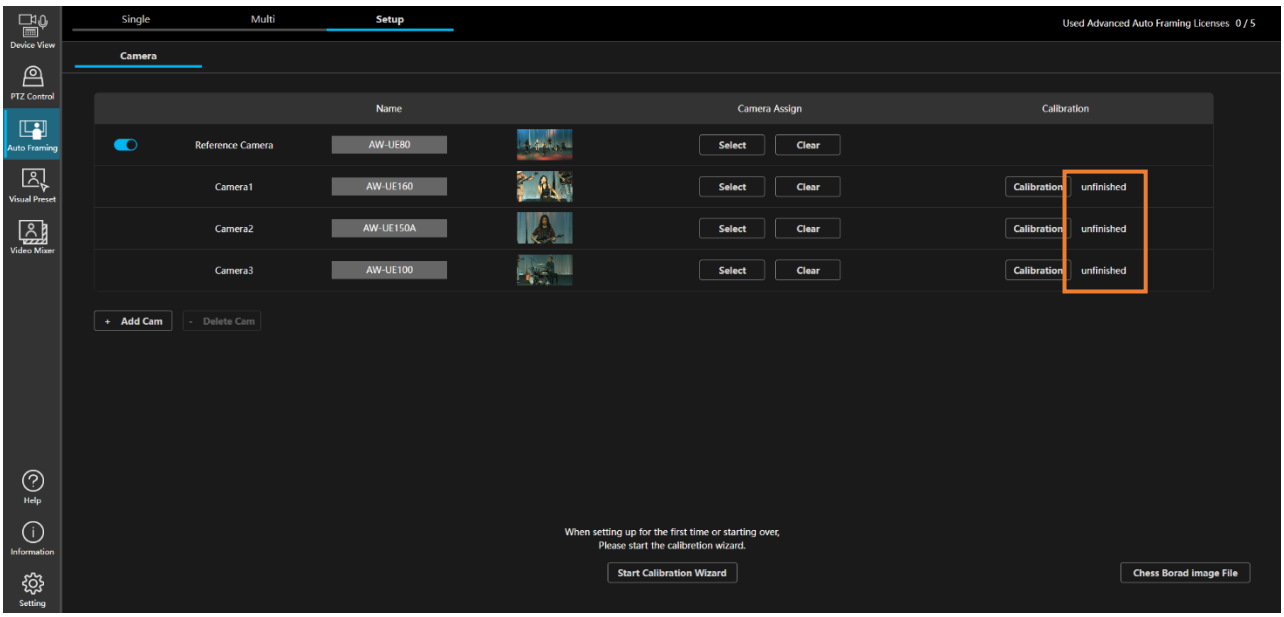
  There is no problem with the calibration result, so proceed to the next step 8.

- When the positions are greatly misaligned/they are not standing up straight

  The measurement error is so great that calibration should be performed again. Click the Back button at the bottom of the screen to go back to the calibration screen in step 6, and perform calibration again.

8. If there are other framing cameras to be calibrated, the Next button will appear at the bottom of the screen.
   Click the Next button to display the calibration screen for the next framing camera, and perform steps 6. and 7.
   You can change the checkerboard placement for each framing camera.
   When all framing cameras are calibrated, the Done button will appear at the bottom of the screen. Click the Done button to complete whole calibration.

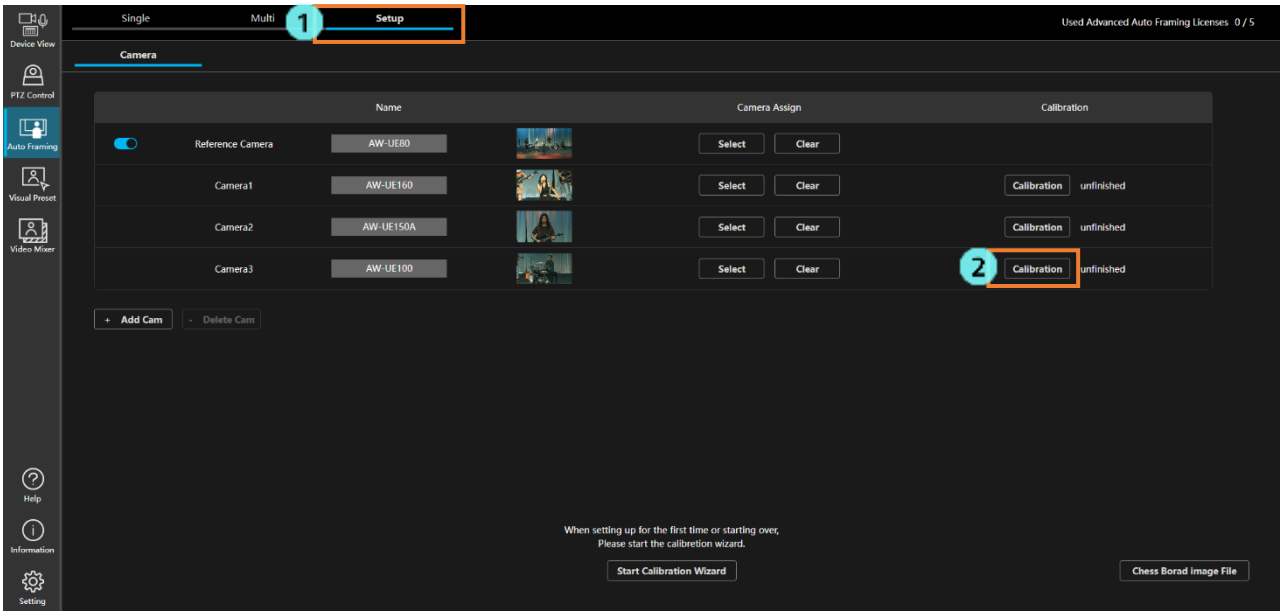
"Calibrated" is displayed in the Calibration column on the right end of the display row of the calibrated framing cameras.



• Separate calibration procedure

1. Click the Setup tab at the top of the screen to display the Setup screen.
2. Click the Calibration button on the right end of the display row of framing cameras to be calibrated to start separate calibration.

   The following procedures are the same as steps 6. and 7. of the whole calibration procedure. Refer to the explanation for whole calibration to perform it.



Linking with remote camera controller

Linking with remote camera controller

You can use this function in conjunction with our remote camera controller.

The following is a conceptual diagram of remote camera linking.
Normally, the remote camera controller communicates directly with the PTZ camera, but when linking a remote camera, this software relays the communication between the remote camera controller and the PTZ camera.
By relaying the camera selection, Pan/Tilt/Zoom and other operations of the remote camera controller, this software synchronizes the camera selection and coordinates the remote camera controller and auto framing operations.

Operations enabled by linking with the remote camera controller

The following operations are available when linking with the remote camera controller.

- Synchronize camera selection between the screen of this function and the remote camera controller
- Operate the Enable switch of auto framing function from the remote camera controller
- Operate start/stop auto framing operation from the remote camera controller
- When operating the Pan/Tilt joystick or Zoom slider of the remote camera controller, stop auto framing operation and activate manual camera control
- When the camera preset is recalled, registered or deleted from the remote camera controller, perform these operations

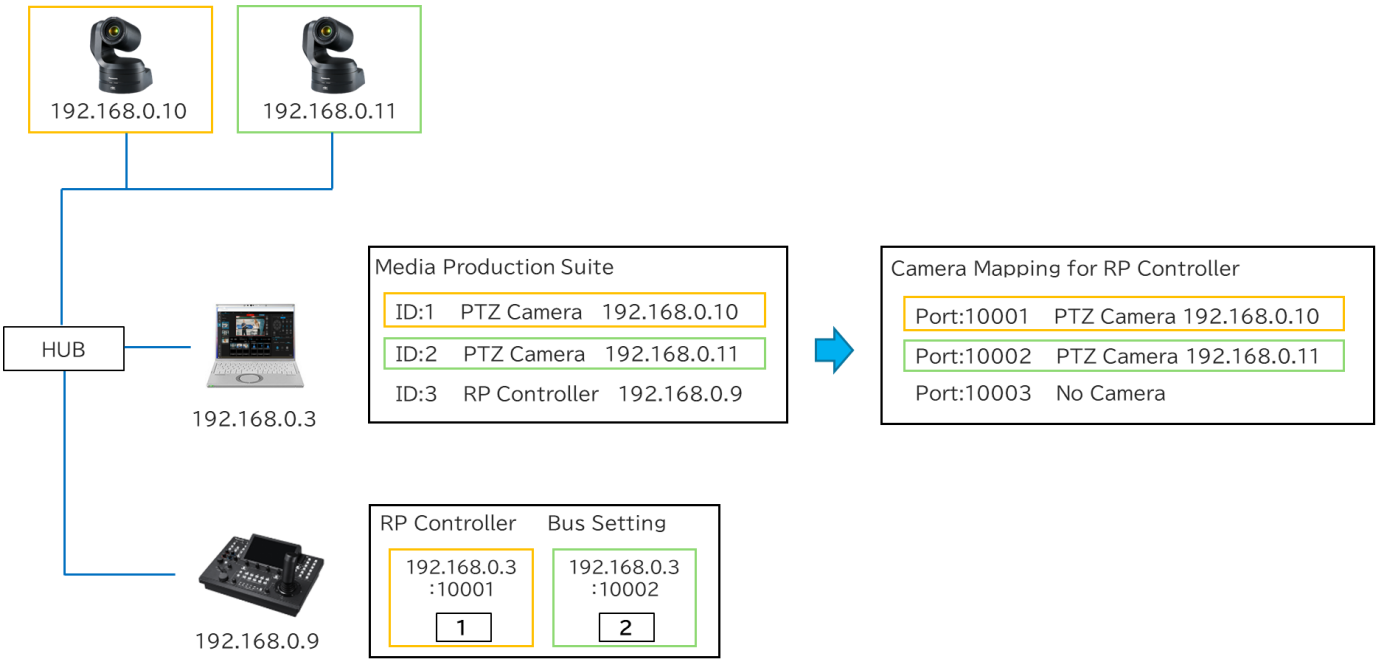
in the same as when operated on the GUI screen of this function

<NOTE>

- When the Enable switch of camera's auto framing is turned on, recalls, registrations, and deletions of camera preset from the remote camera controller can only be performed when the screen of this function is displayed in the web browser. These operations cannot be performed when the screen of this function is not displayed.

Example of systems and settings for linking with a remote camera controller

The following is the example of the system when linking with a remote camera controller.



In the example of the system above, there are the following devices:

- 2 PTZ cameras (IP address: 192.168.0.10, 192.168.0.11)
- PC on which this software is installed (IP address: 192.168.0.3)
- Remote camera controller (IP address: 192.168.0.9)

and two PTZ cameras and a remote camera controller are already registered on this software.

■ Camera mapping operation of this software

When a PTZ camera is registered with this software, mapping will be performed between the registered PTZ camera and a port number (default: 10001), starting from the port number for linking with the remote camera controller.

The system example above shows a mapping example when the port number for linking with the remote camera controller is set as 10001 and there are two PTZ cameras ID: 1 and ID: 2.

- Port number 10001: Mapping the camera with IP address 192.168.0.10
- Port number 10002: Mapping the camera with IP address 192.168.0.11

■ Remote camera controller settings

Configure the following settings for the camera selection button on the remote camera controller.

- IP address: IP address of the PC on which this software is installed
- Port number: The port number to which the camera selected by the camera selection button is mapped to

In case of the system example shown above, configure the settings as follows.

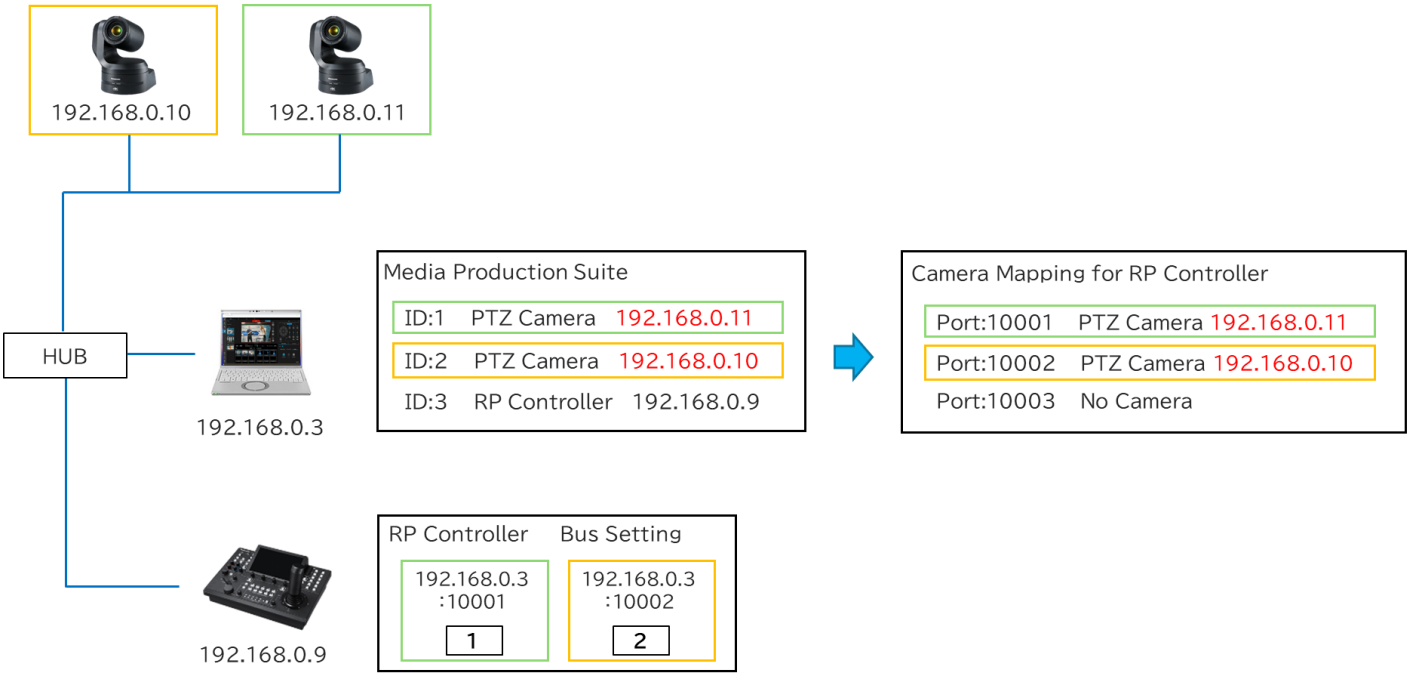
- Camera selection button 1

  IP address: 192.168.0.3, port number: 10001 (selecting the camera with ID: 1)
- Camera selection button 2

  IP address: 192.168.0.3, port number: 10002 (selecting the camera with ID: 2)

■ Operation when the camera order is changed

The following figure shows the result of changing the order of the cameras with ID: 1 and ID: 2 using this software, from the state of the system example shown above. Red text in the figure indicates the parts that have changed.
In conjunction with changing the order, the cameras mapped to the port number for linking with the remote camera controller in this software also change. Therefore, the cameras selected using the camera selection button are also switched without changing the settings on the remote camera controller.



Set up to link with a remote camera controller

The following settings are required for linking with a remote camera controller.

1. Register PTZ camera to the first group in this software.
2. Register a remote camera controller in this software.
3. Set up a port number for linking with the remote camera controller in this software.
4. Assign cameras via the remote camera controller according to the camera mapping status of this software.
5. Assign the framing control function to the User button via the remote camera controller.
6. (In the case of synchronizing camera selection) Select the remote camera controller to be used for linking in the GUI of this function.

Below is an explanation of the setting procedure for each.

■ Register a PTZ camera to the first group via this software

Registering a PTZ camera is carried out on the Device Manager function screen. For details on the registration procedure, refer to “Registering a Device” in the operation manual of the Device Manager function.

1. Click the Device Manager button in the function selection area on the left side of the screen of this software to display the Device Manager screen.
2. Click the Add Device button in the Device Manager screen to display the device registration screen.
3. Select the first group in the Group column of the device registration screen.
   * Selecting a group other than the first one may cause problems with synchronizing camera selection. Please make sure to select the first group.
4. The list of devices on the network will be displayed in the Auto Search field of the device registration screen, so check the box for the PTZ camera you want to register.
   Alternatively, in the Manual field of the device registration screen, select Type: PTZ Camera and manually enter the IP address and other information of the PTZ camera.
5. Click the OK button on the device registration screen to register the device.

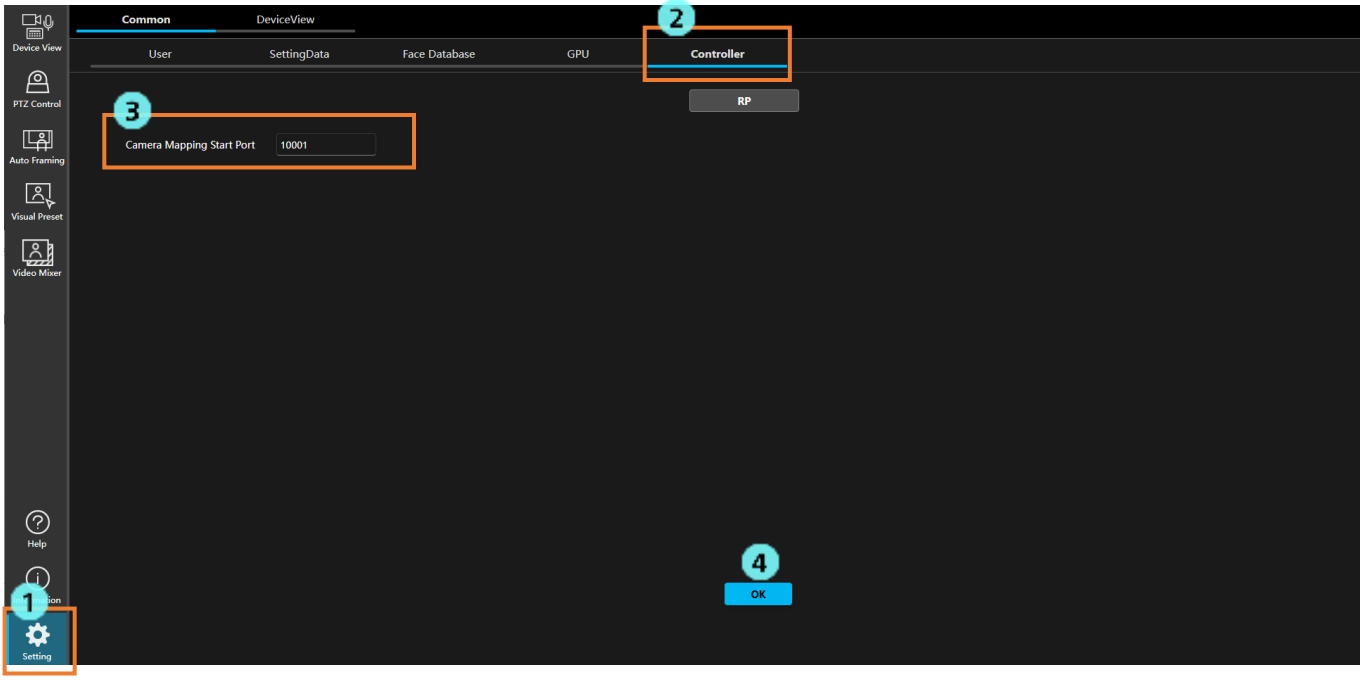
■ Register a remote camera controller via this software

Registering a remote camera controller is carried out on the Device Manager function screen. For details on the registration procedure, refer to “Registering a Device” in the operation manual of the Device Manager function.

1. Click the Device Manager button in the function selection area on the left side of the screen of this software to display the Device Manager screen.
2. Click the Add Device button in the Device Manager screen to display the device registration screen.
3. The list of devices on the network will be displayed in the Auto Search field of the device registration screen, so check the box for the remote camera controller you want to register.
   Alternatively, in the Manual field of the device registration screen, select Type: RP Controller and manually enter the IP address and other information of the remote camera controller.
4. Click the OK button on the device registration screen to register the device.

■ Set up a port number for linking with the remote camera controller via this software

The port number for linking with the remote camera controller is configured in the screen of the Setting function. The default port number is 10001. There is usually no need to modify the setting. However, if an error occurs in the camera mapping (the port number cannot be used) as described later, please modify the setting to another port number.



1. Click the Setting button in the function selection area on the left side of the screen of this software to display the Setting screen.
2. Select the Controller tab at the top of the Setting screen.
3. Enter a value for Camera Mapping Start Port in the range 10001 to 50001.
4. Click the OK button to save the settings.

■ Assign cameras via the remote camera controller according to the camera mapping status in this software

As described in "Overview of linking with remote camera controller", when registering a PTZ camera with this software, mapping is performed between the registered PTZ camera and the port number, starting from the port number for linking with the remote camera controller.

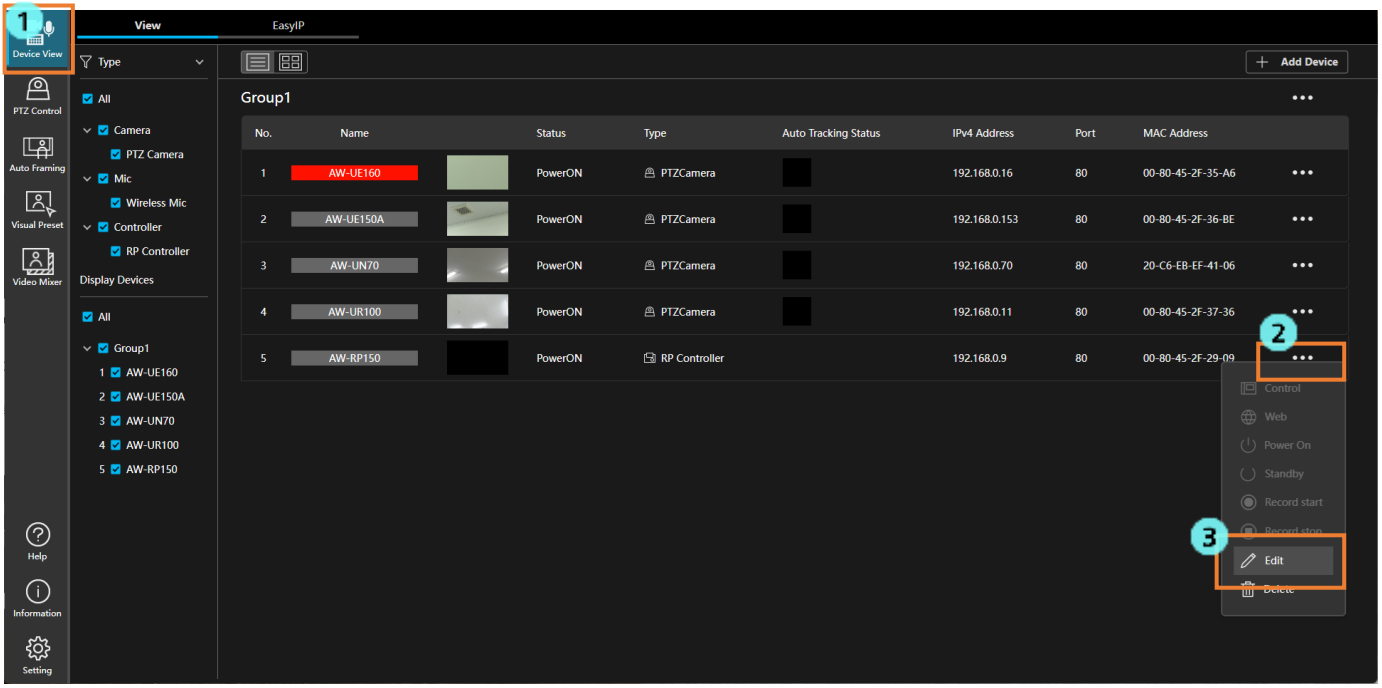
When assigning cameras to the camera selection button of the remote camera controller, the settings should be made according to the mapping of this software.

The following explains the procedure, divided into two parts.

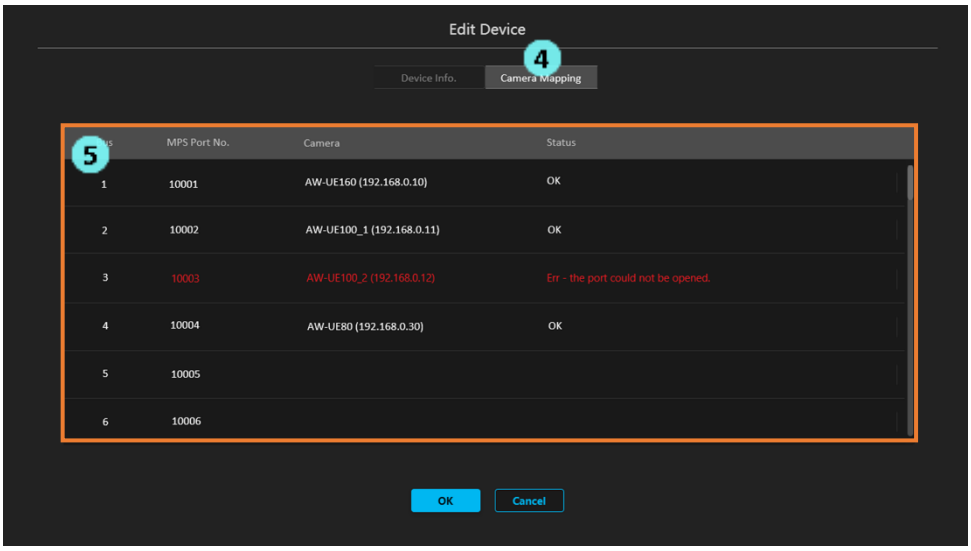
- Procedure for checking the mapping status of this software
- Procedure for assigning cameras in the remote camera controller

Procedure for checking the mapping status of this software

Registering a remote camera controller is carried out on the Device Manager function screen.



1. Click the Device Manager button in the function selection area on the left side of the screen of this software to display the Device Manager screen.
2. Click the … button on the right end of the remote camera controller (Type: RP Controller) displayed in the device list on the Device Manager screen to display the device menu. If multiple remote camera controllers are registered, any one of them can be selected.
3. Click Edit from the device menu displayed, and the device editing screen will be displayed.



4. Select the Camera Mapping tab on the device editing screen.
5. The following details will be displayed as a camera mapping list.

   Bus: Camera selection number assigned from 1 onwards.

   MPS Port No.: Port number for linking with the remote camera controller

   Camera: Name and IP address of the camera mapped to the port for linking with the remote camera controller

   Status: Mapping result (OK is displayed when normal; if there is an error, Err is displayed followed by the cause)

If the mapping results for all cameras are normal, there is no problem using the displayed mapping details to assign them to the remote camera controller.

If there are any errors in the mapping results, the selection of the camera mapped to that port will not work properly. Please change the port number to an appropriate number according to the procedure described in the previous section, "**Set up a port number for linking with the remote camera controller via this software**". Mapping will be redone after changing the port number, so please reconfirm the mapping results using the procedure described above.

Procedure for assigning cameras in the remote camera controller

To ensure that the camera selection between this software and the remote camera controller is consistent, assign the camera to the camera selection button on the remote camera controller.

When assigning a camera to a camera selection button, set the IP address and port number as follows.

IP address: IP address of the PC on which this software is installed

Port number: Set the MPS Port No. of the Bus number that matches the number of the camera selection button in the mapping list described above.

Example: When assigning the camera selection button 3 on the remote camera controller, select the MPS Port No. displayed in the Bus number 3 row of the mapping list.

<NOTE>

- For operating procedures on the remote camera controller when assigning cameras, please refer to the operation manual of the remote camera controller.
- If there are multiple camera controllers, please assign the cameras in the same way in all camera controllers.
- If the following operations are performed in this software, the contents of the mapping list will change. Please check the contents of the mapping list again before assigning the cameras on the remote camera controller.
  - Adding, deleting, or reordering registered devices
  - Changing the port number for linking with the remote camera controller

■ Assign the framing control function to the User button via the remote camera controller

The following control functions can be assigned to the User button of the remote camera controller.

- Operation of the Enable switch of auto framing function
- Start/stop switching auto framing operation

To assign a function, please configure the following settings on the remote camera controller. For details on how to configure the settings, please refer to the operation manual of the remote camera controller.

- Set the SYSTEM ->TRACKING item as follows

  TR CONT: LAN

  TR IP: IP address of the PC on which this software is installed

  PORT: 1338

- Set the User button in the FUNCTION->USER ASSIGN item as follows

  The User button to which to assign the Enable switch operation of the auto framing function: Set TR CNCT

  The User button to which to assign the start/stop operation of the auto framing operation: Set TRCKING

<NOTE>

- The camera number on this software must match the number on the camera assignment button on the remote camera controller. If they do not match, operations will be performed on a different camera.
- The USER buttons (TR CNCT, TRCKING) can be used with camera numbers 1 to 10 on the remote camera controller.

■ Recommended settings for the remote camera controller

The following settings are recommended in the remote camera controller when using this function.
For details on how to configure the settings, please refer to the operation manual of the remote camera controller.

Settings for using Preset Speed Setting with this software

- For AW-RP150

  PMEM/TMEM -> SETTING -> RCL SP MD: CAMERA

- For AW-RP60

  MENU -> PMEM SETTING -> SETTING -> RP CTRL SPD MODE: CAMERA

■ (In the case of synchronizing camera selection) Select the remote camera controller to be used for linking in the GUI in Auto Framing function

To synchronize the camera selection between the remote camera controller and this software, it is necessary to select the remote camera controller you want to synchronize on the GUI screen of this function.

1. Display the screen of this function.
2. When you select the remote camera controller you want to synchronize from the Camera Controller list at the bottom right of the screen, the camera selection will be synchronized between the selected remote camera controller and the screen of this function.
   If a blank is selected from the list, synchronization will not be performed.

<NOTE>

- Synchronization is performed for each screen that is open in the web browser. Therefore, if multiple web browser windoows have this function screen open, this selection process will need to be performed on each screen.
  If there are multiple camera controllers, you can change the camera controller you want to synchronize for each screen.

Feature restrictions by role

List of feature restrictions by role

Among the roles of Administrator/Super User/User, the User account has restrictions on the use of certain features. Features indicated with a circle (○) in the table below are available for use.

		Administrator	Super User	User
Accessible camera		All	All	Only permitted camera
Auto Framing operation	Auto Framing function ON/OFF	○	○	○
	Start/stop auto framing operation	○	○	○
	Add/delete target	○	○	○
	Mapping button operation	○	○	○
	Framing settings - Adjustment using Pan/Tilt/Zoom control panel	○	○	○
	Framing settings - Auto Zoom settings	○	○	○
	Framing settings - Pan/Tilt Speed adjustment	○	○	○
	Framing settings - Auto Zoom Speed adjustment	○	○	○
	Framing settings - Sensitivity adjustment	○	○	○
	Register/delete target frame	○	○	
	Recall target frame	○	○	○
	Name setting of Target Frame	○	○	
	Speed setting of Target Frame	○	○	○
	Auto Start Area settings	○	○	○
	Mark Area settings	○	○	○
	Configure detailed settings	○	○	
PTZ operation	Pan/Tilt operation	○	○	○
	Zoom operation	○	○	○
	Pan/Tilt Limitation	○	○	
Preset operation	Preset registration/deletion	○	○	
	Preset recall	○	○	○
	Preset display update	○	○	○
	Preset name setting	○	○	
	Preset Speed setting	○	○	○
	Recall Home position	○	○	○

Focus/Image quality adjustment	Focus	○	○	○
	Iris	○	○	○
	Gain	○	○	
	White Balance	○	○	
	AWB/ABB	○	○	
	Shutter	○	○	
	ND Filter	○	○	
Other operations	Select remote camera controller to link with	○	○	○
	Display web interface of the camera	○	○	○