

Focus recall

Instant focus even in challenging lighting conditions

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1 Summary

Focus recall makes it easy for the user to use a PTZ camera optimally in challenging lighting conditions, such as scenes with low contrast and point-shaped light sources, for example, strong headlights from meeting traffic.

As soon as the user has set the focus recall area, the function is automatic, giving instant focus when the user pans or tilts the camera view manually past the predefined area. There is no need for the user to choose the focus recall area from a menu or remember where it is – it appears automatically and instantly when the user needs it.

2 Introduction

This white paper describes what focus recall is and discusses the differences between autofocus, presets, and focus recall.

3 What is focus recall?

Focus recall provides instant focus in predefined areas, making it easier to use a pan/tilt/zoom (PTZ) camera optimally in challenging lighting conditions. To use focus recall, the user just clicks a button when he or she is satisfied with the focus of the current view, and the camera creates a focus recall area. Later, when the user manually pans or tilts the camera and the camera view moves into a focus recall area, the camera automatically recalls the previously set focus for that view. Even if the user zooms in or out, the camera will keep the same focus position.

The focus recall feature is useful in scenarios that require a lot of manual operation, for example, using a joystick. Focus recall is especially beneficial in scenes with low contrast and point-shaped light sources, such as strong headlights from meeting traffic.

In autotracking, the PTZ camera automatically detects a moving object and tracks it, changing the view as the object moves. Using focus recall areas in autotracking, the camera will find focus instantly. In recorded guard tours, the camera displays a number of previously chosen camera views or paths. The user can use focus recall areas to speed up focusing also during recorded guard tours.

4 Difference between autofocus, presets, and focus recall

4.1 Autofocus

A camera with autofocus focuses automatically. The autofocus feature requires neither setting nor programming to work. In Axis PTZ cameras, it is set to ON as default and starts working as soon as the camera is turned on.

In scenes with low light or contrast, or that contains a lot of noise, the autofocus may need some time to find focus, and sometimes it will even focus on the wrong object. When the scene changes, focus may be lost for a moment until the autofocus feature finds it again. This can give the user the impression that focus is coming and going repeatedly. A focus recall area in the desired view is a quick and easy way to regain focus immediately.

The main difference between autofocus and focus recall is that autofocus will adjust focus every time the scene changes. Focus recall instead memorizes an area with a fixed focus, eliminating the need for repeated adjustments. This makes focus recall a faster way to find focus in a specific, predefined area. In addition, when autofocus is used in a scene with a lot of movement or noise, there may be frequent changes in focus. In the same scene, focus recall would find focus instantly.

For more information, see axis.com/products/ptz-cameras.

4.2 Presets

When using a preset, the user saves the current PTZ and focus settings, finding focus either manually or using the autofocus feature. The user gives the preset a suitable name, for example, Gate.

To return to the preset, the user actively tells the camera to return to the preset, for example, by choosing it from a drop-down menu. The user cannot use the joystick to go to the preset. As a comparison, focus recall is activated automatically as soon as the user pans or tilts past the focus recall area using the joystick.

A preset focuses on a single point, while focus recall saves the entire view as a focus recall area. When the user chooses a preset, the camera moves to the preset position. In focus recall, on the other hand, the camera automatically gets focus when it moves into a scene with a focus recall area.

5 How does focus recall work?

The focus recall feature is very easy to use. The user sets a focus recall area by clicking the focus recall button when the view has the desired focus. The focus recall button is placed in the live view control bar of the graphical user interface (GUI) of the camera. See *figure 1*.

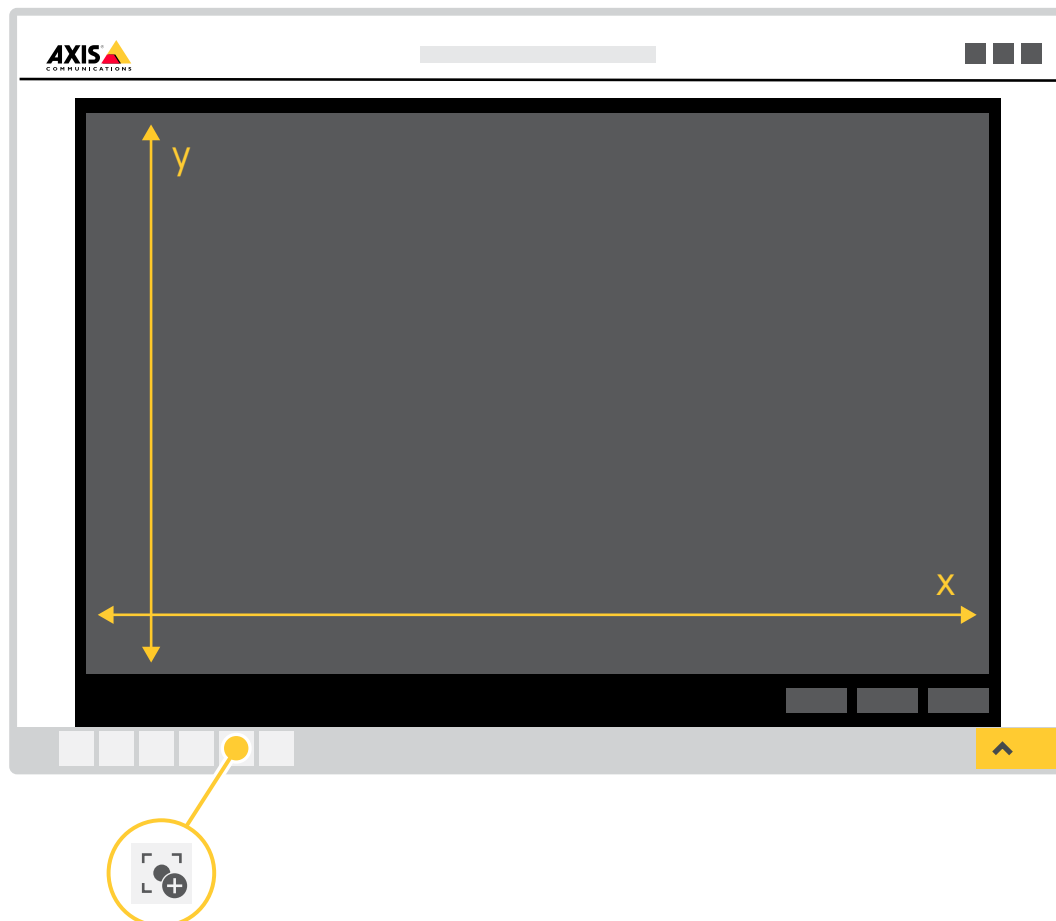


Figure 1. The camera GUI with focus recall button. X is the pan range, Y is the tilt range.

When the user clicks the focus recall button, the entire view that the camera is currently showing becomes a focus recall area. When the user adds a focus recall area, the camera saves its focus setting. The focus recall button changes to a minus sign (–), indicating that the focus recall area is set. Before clicking the focus recall button, the user can either use the focus set by autofocus or choose focus manually. To be as useful as possible, a focus recall area should be set when the camera has been zoomed in on an object of interest.

If the user wants to remove a focus recall area, he or she moves the camera into the focus recall area and once again clicks the focus recall button. The button toggles to display a plus sign (+), indicating that the area has been removed and that it is possible to set a new area in the view.

If the user wants to locate a set focus recall area actively, he or she needs to move the camera view until the plus sign of the focus recall button changes to a minus. However, since focus recall is activated automatically when the user pans or tilts the camera view past a focus recall area, there is no need for

the user to search for areas. When 50% of a focus recall area is visible in the camera view, the camera activates the focus recall feature automatically.

The user can set up to 20 individual focus recall areas. The focus recall feature can easily be integrated into video management systems (VMS) using VAPIX®, Axis own open application programming interface (API).

For more information, see www.axis.com/support/developer-support/vapix.

6 Use cases

Focus recall is useful in low-light conditions, in scenes with a lot of movement, noise, and point-shaped light sources, such as transportation and traffic surveillance with 24/7 surveillance staff. *Figure 2* shows an example of such a scene.



Figure 2. Example of traffic surveillance with many point-shaped light sources and a lot of movement.

6.1 Examples of focus recall areas

The first example is a parking garage exit where car headlights tend to make it difficult for a camera without focus recall to focus. The user sets the exit as a focus recall area to be able to quickly see the

license plate of cars leaving the garage. The box in *figure 3* symbolizes the area where the user has set a focus recall area. As soon as the user pans or tilts the camera view into the focus recall area, the camera will focus on the license plate.

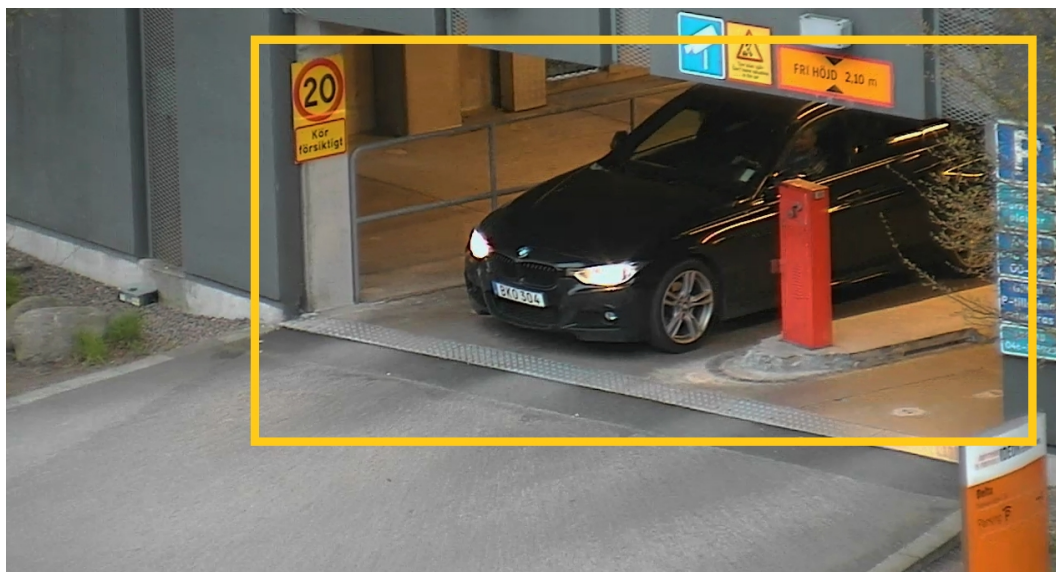


Figure 3. A focus recall area at a parking garage exit.

The next example is a street with poor contrast and fast moving vehicles, see *figure 4*. The user sets one stretch of the street as a focus recall area to be able to recognize vehicles quickly.

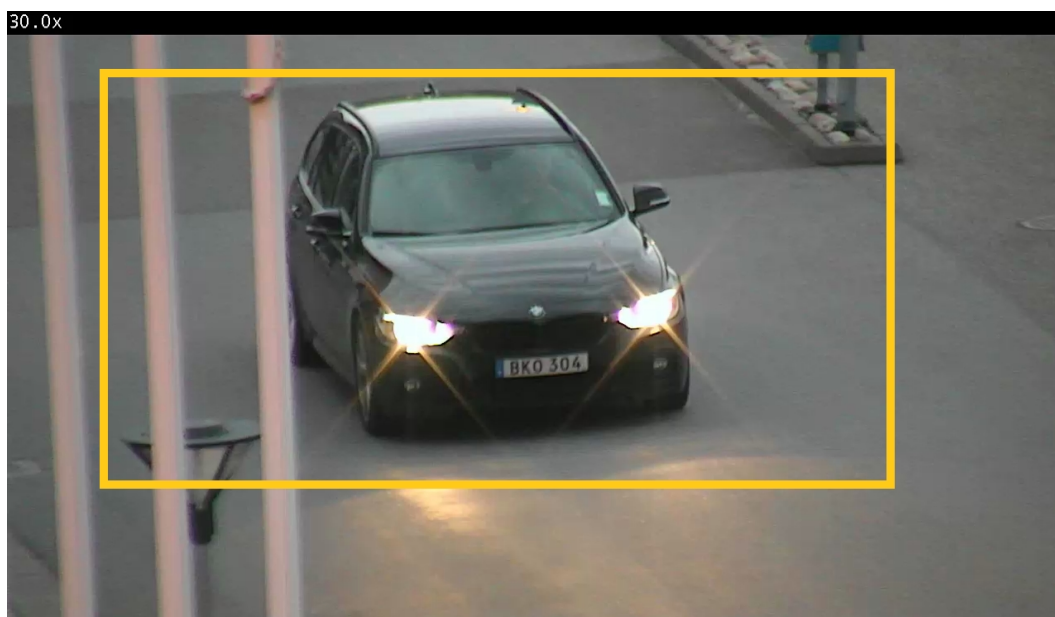


Figure 4. A focus recall area in a busy street.

Note

The yellow box is only for illustration and is not part of the focus recall feature. It will not be visible on the screen.

About Axis Communications

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