APPLICATION NOTE

USING VIVOTEK FISHEYE CAMERAS WITH MILESTONE® XPROTECT

Version 1.3d
2020/05/20

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Revision History

Version	Issue date	Editor	Comment
V1.0		Ives	Initial draft
V1.1		Ives	Wording Modify
V1.2		Ives	Wording Modify and version modify for Fishey Plug-in Ver#3.0
V1.3a	2019/7/17	Betty	Delete Prerequirement of fisheye camera sections, and version modify for Fisheye Plug-in Ver#3.0.0.1
V1.3b	2019/07/18	Ives	Update Milestone Supporting version, .Net Framework and related module version & link.
V1.3c	2019/12/20	Betty	Add Prerequisites for Fisheye Cameras.
V1.3d	2020/05/20	Ives, Sandra	Update some figures and revise description.

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1. For Milestone® XProtect Users

A proprietary plug-in is available for users who install Fisheye cameras in a deployment managed by Milestone XPortect Corporate or Enterprise IP solutions. The plug-in enables image dewarping, pan, tilt, and zoom in/out over a video feed using a mouse or joystick.

NOTE:

The plug-in applies to:

XProtect Professional/ XProtect Professional +/ XProtect Expert/ XProtect Corporate / XProtect Express/ XProtect Express+/ XProtect Essential+

The plug-in does not apply to:

XProtect Go/ XProtect Essential

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2. Getting Started

Complete the following procedure as the prerequisites for installing Milestone's SmartClient and the plug-in:

(1) Download VIVOTEK's fisheye plug-in from VIVOTEK's Fisheye Camera's download page for appropriate plug-ins (for x64 or x86 versions[1]).

(2) Install the **.NET framework 4.7** Runtime[2]. The .NET framework is essential for installing SmartClient.

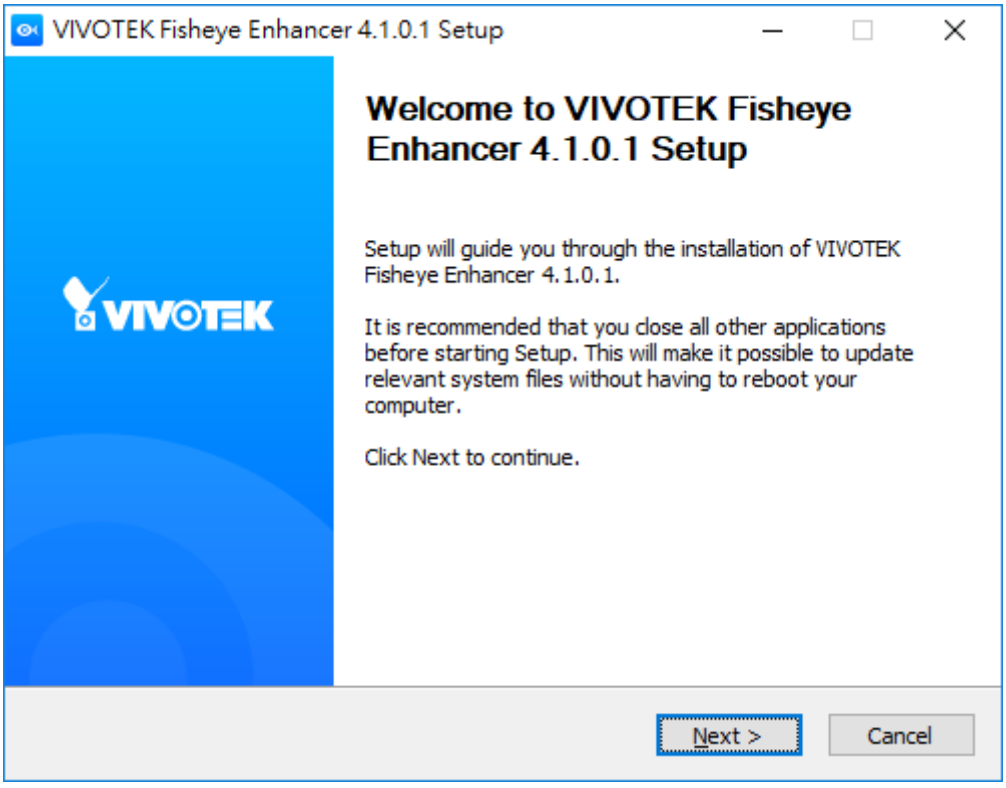
(3) Install the **DirectX runtime (9.29.1974)**[3] and above. The DirectX runtime is also necessary to the plug-in for managing DirectX components especially for older Windows XP Systems.

(4) Install the Milestone XProtect SmartClient 2020 R1 (20.1b) or above.

(5) Execute the Fisheye Enhancer installer file:

a. By default, a sub-folder named **MIPPlugins** is available under the Milestone Smart Client installation path. The default file path should look like the following:
C:\Program Files\Milestone\MIPPlugins\VIVOTEK Fisheye Enhancer

b. Click Install to proceed with installation.



[1] OS supports extends from Windows 8.1 to Windows 10.
[2] .Net Framework: https://dotnet.microsoft.com/download/dotnet-framework/net47
[3] DirectX: http://www.microsoft.com/en-us/download/details.aspx?id=8109

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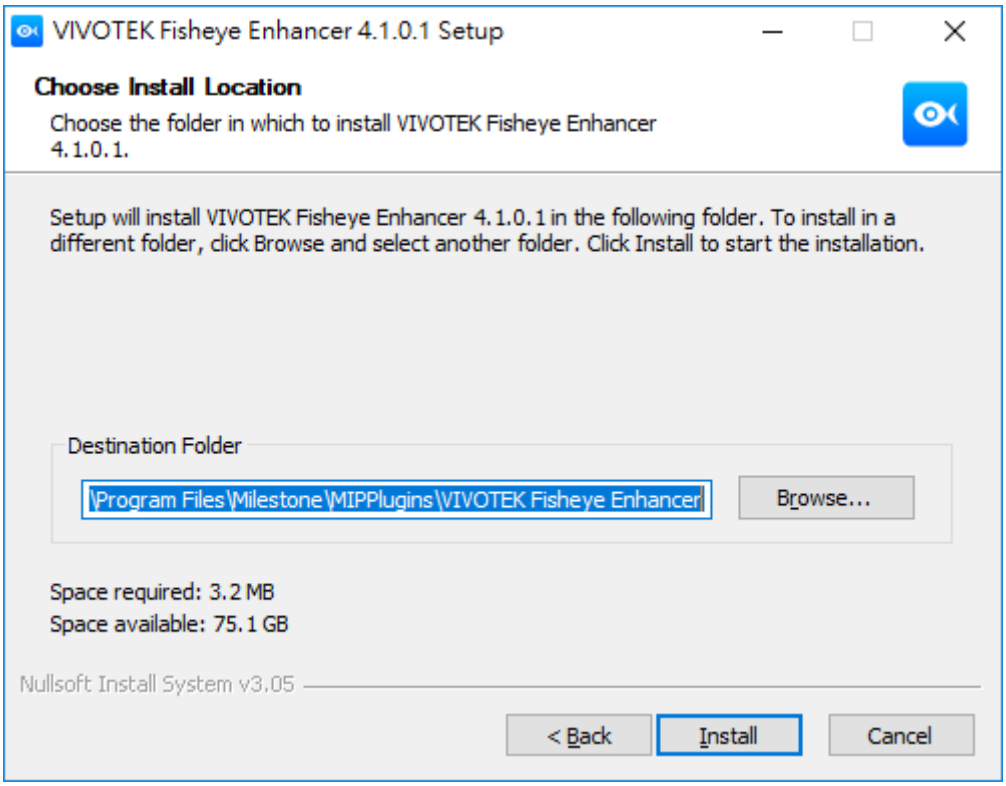

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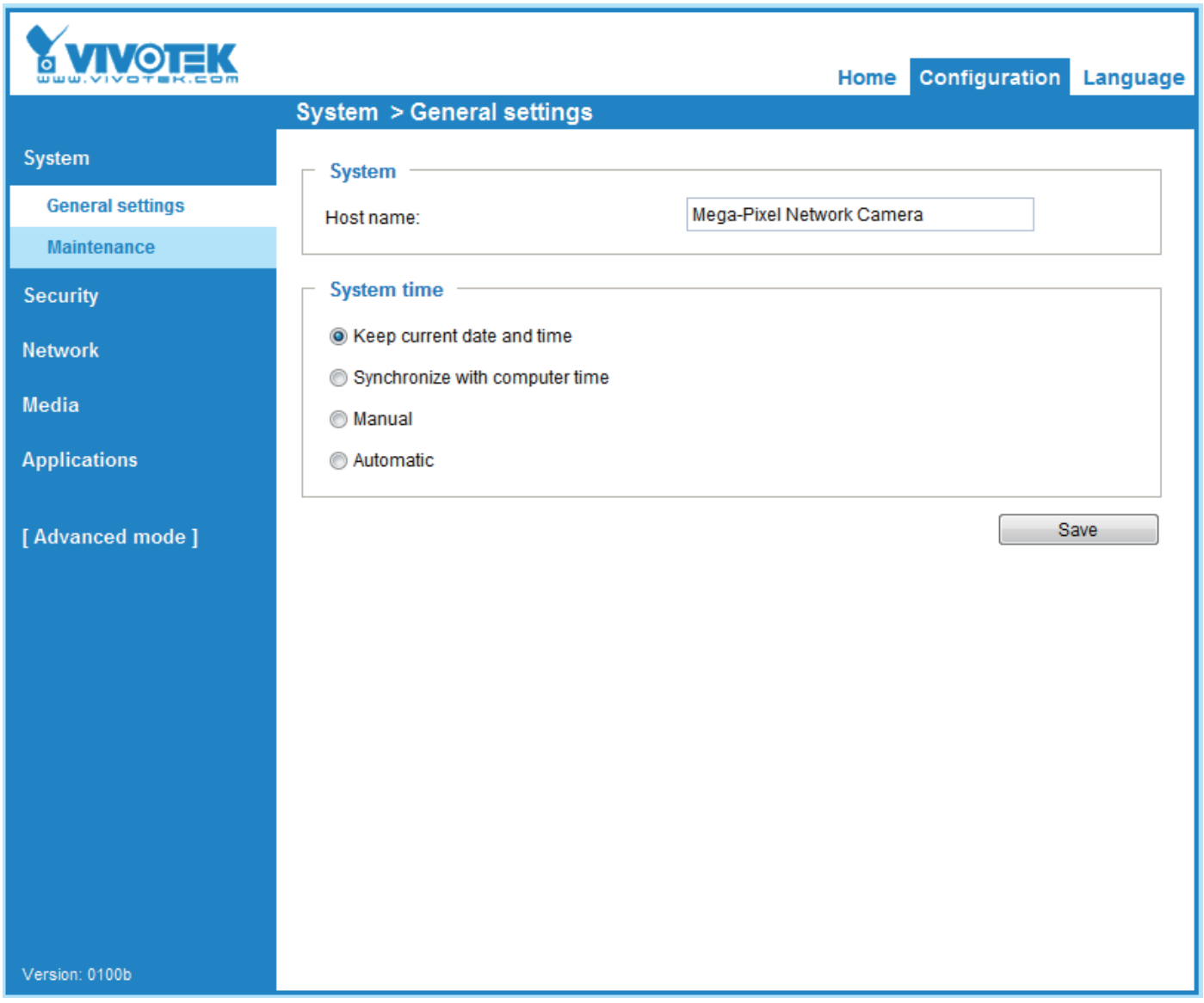
3. Prerequisites for Fisheye cameras

To authenticate the use of the Dewarp plug-in functionality, please make sure the “watermark” on VIVOTEK’s fisheye camera is enabled.

(1) Open a browser session to the camera.

(2) For FE8xxx series, please upgrade firmware to version 0100f or above.

(3) Check the “watermark” is enabled on “Configuration” > [Advanced Mode] > “System” > “Parameters” > “videoin_c0_enablewatermarket ‘1’”.



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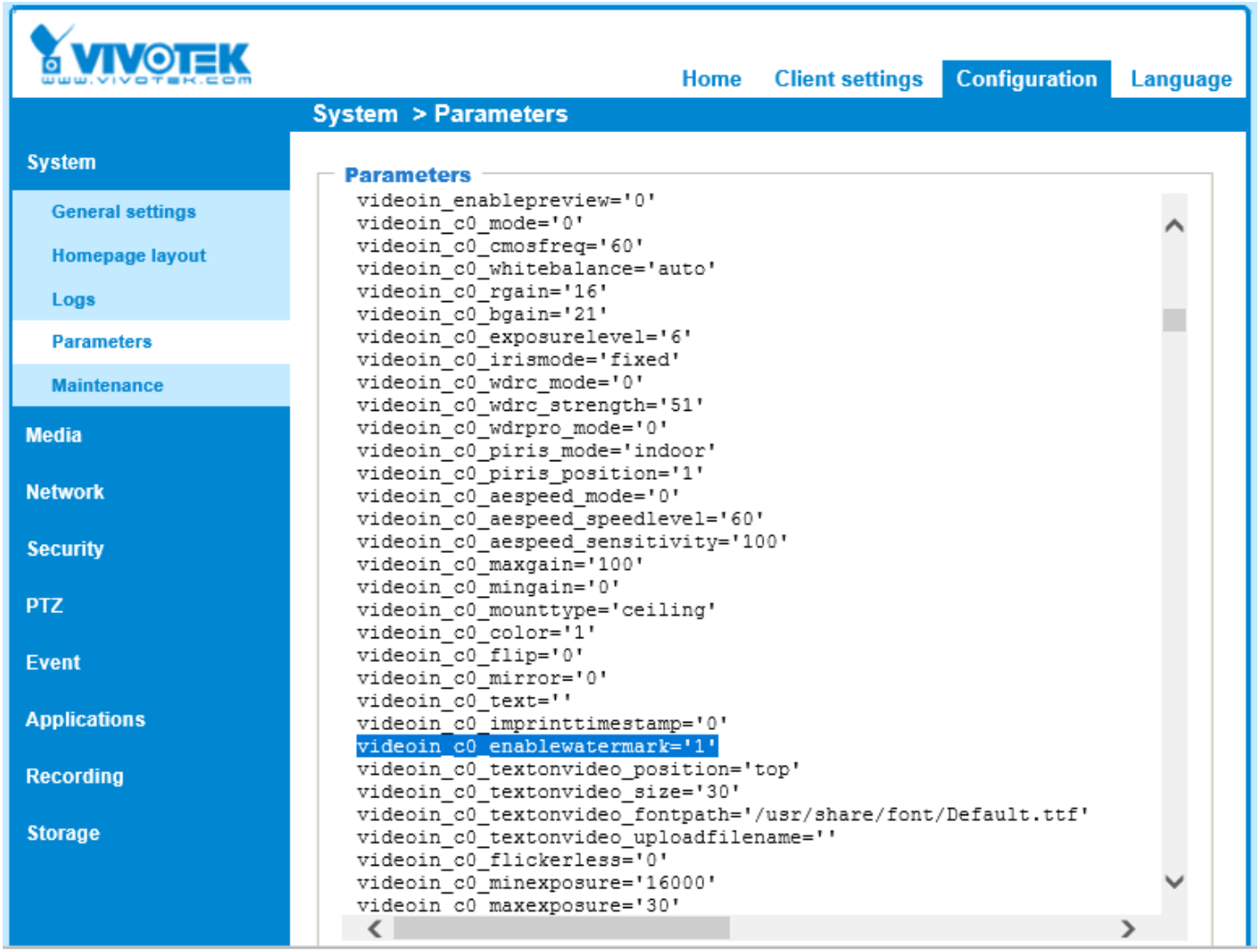

(4) If the "videoin_c0_enablewatermark='0'", please use the following URL command to turn the watermark on.
http://<CAMERA_IP_ADDRESS>/cgi-bin/admin/setparam.cgi?videoin_c0_enablewatermark=1

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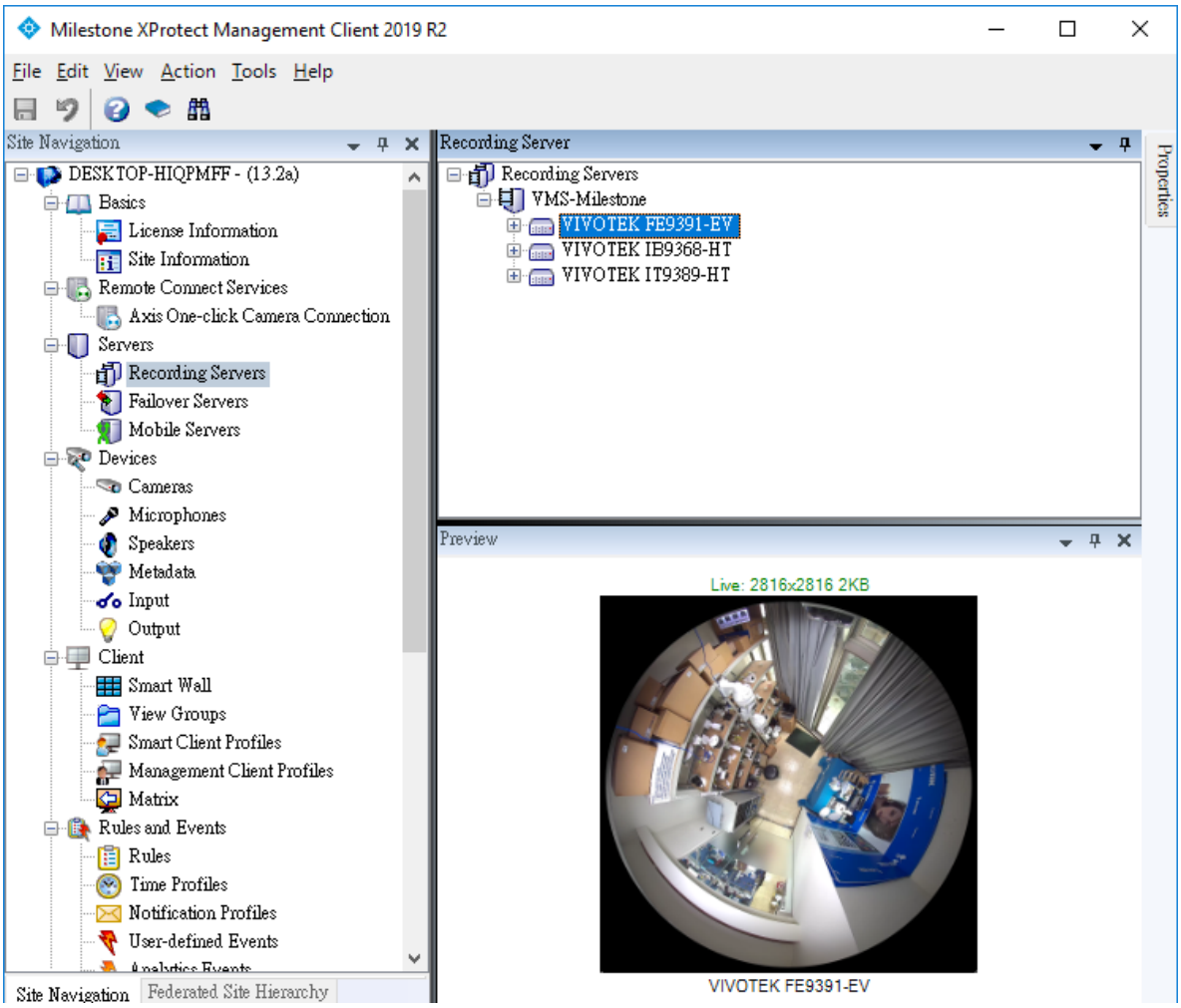
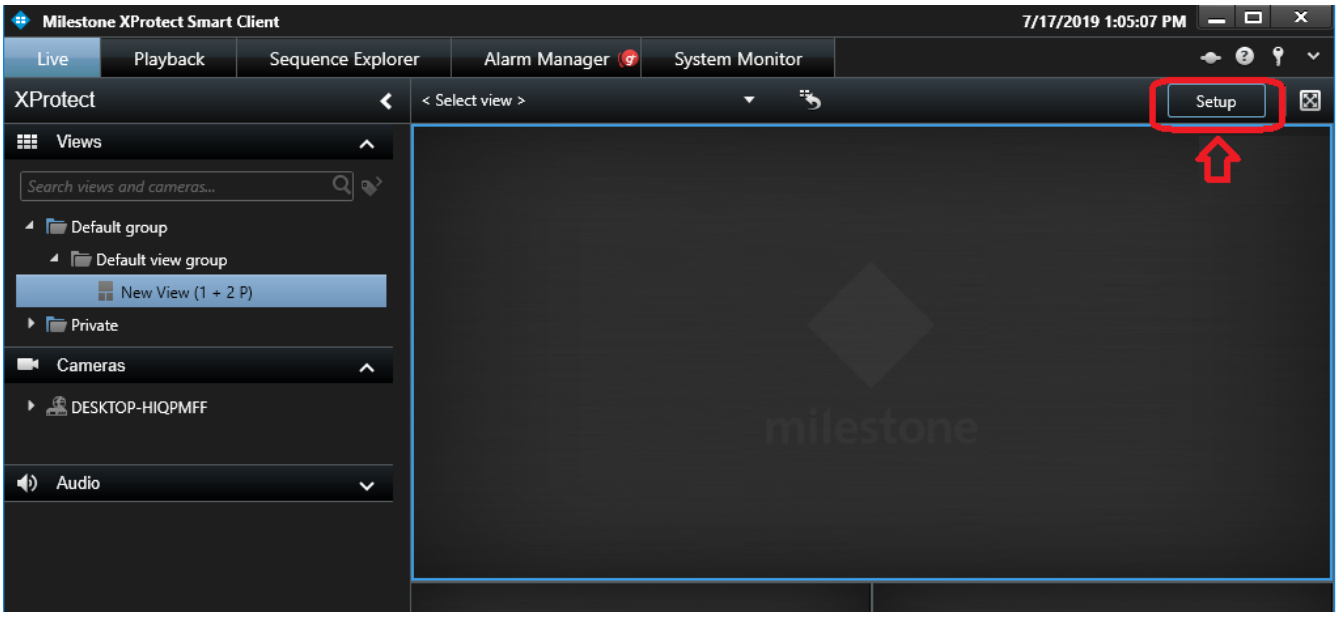
4. To Enable the Plug-in & Operation

(1) Make sure your fisheye cameras have already been added as "**Hardware Devices**" in the Recording Server of XProtect Enterprise / Corporate Management Application.



(2) Start the XProtect Smart Client.

(3) On the Live View window, click on "**Setup**".



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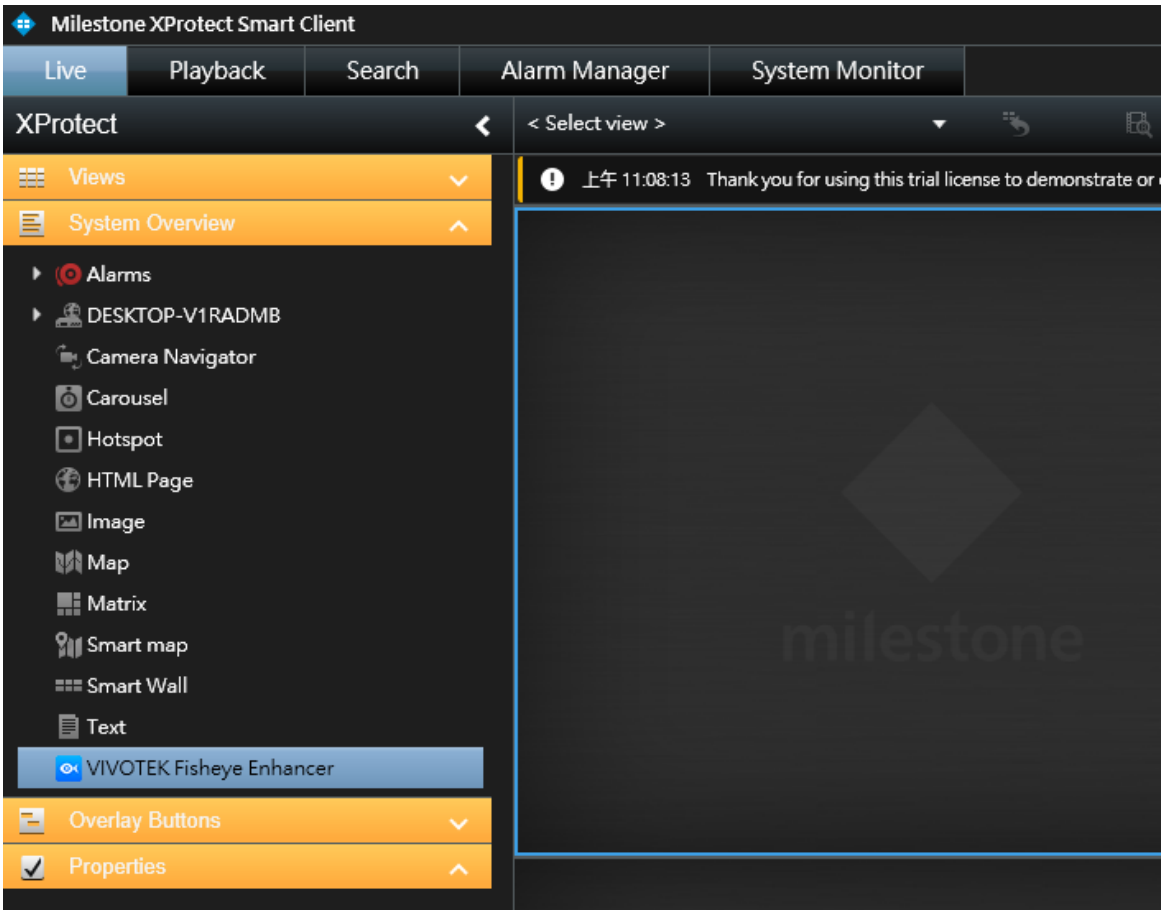
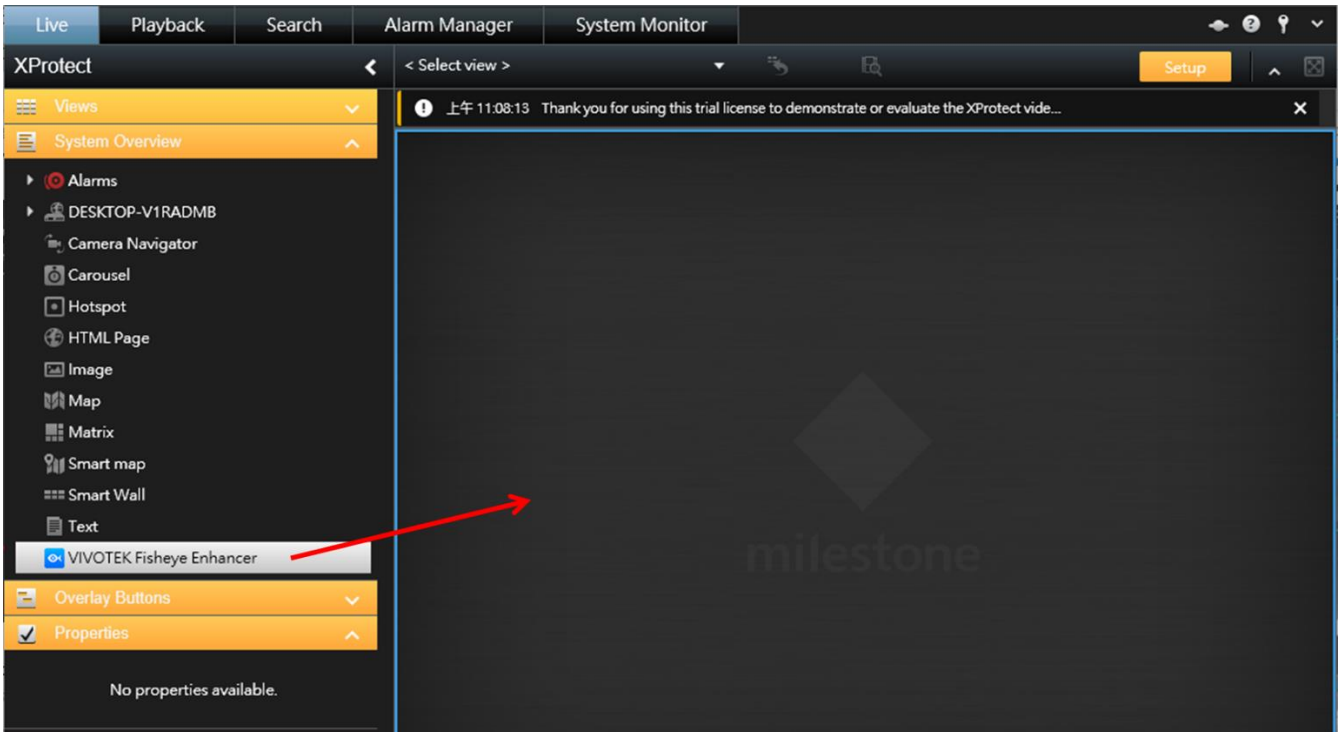
(4) On the Seup Window, search for the "**VIVOTEK Fisheye Enhancer**" Plug-in by dragging the pull-down menu on the "**System Overview**" pane to the bottom.
Please note, if you install the plug-in when your SmartClient is startd, re-start the SmartClient utility.



(5) Click and drag the "**VIVOTEK Fisheye Enhancer**" to a view cell. When done, the view cell will be highlighted by a light blue outer frame.



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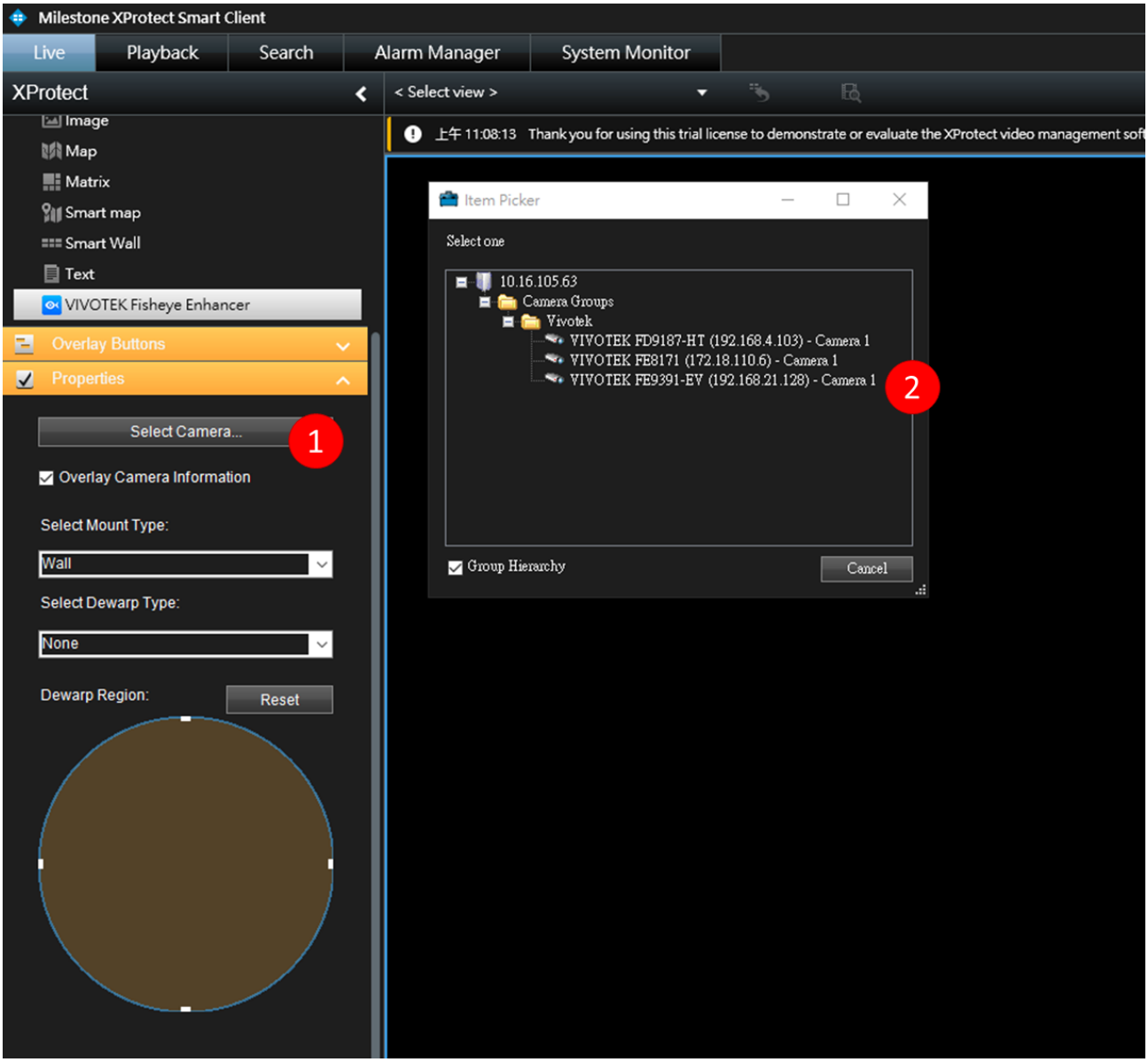
(6) Locate the Properties pane and click on the Item Picker pane. An Item Picker window will prompt. Unfold the device tree and select a VIVOTEK Fisheye Camera. A camera snapshot will be shown on the viewcell after a few seconds for connecting to server.



(7) Select appropriate camer **Mount Type** (Ceiling, Wall or Floor) and **Dewarp Type** (None, Rectilinear, Full View Panorama, or Dual View Panorama). Select the **Overlay Camera Information** Check box to enable a Camera ID caption on the view cell.

IMPORTANT: Start from version 4.1.0.1, plugin will get camera model automatically, therefore the "Select Camera Model" GUI will be removed as well.

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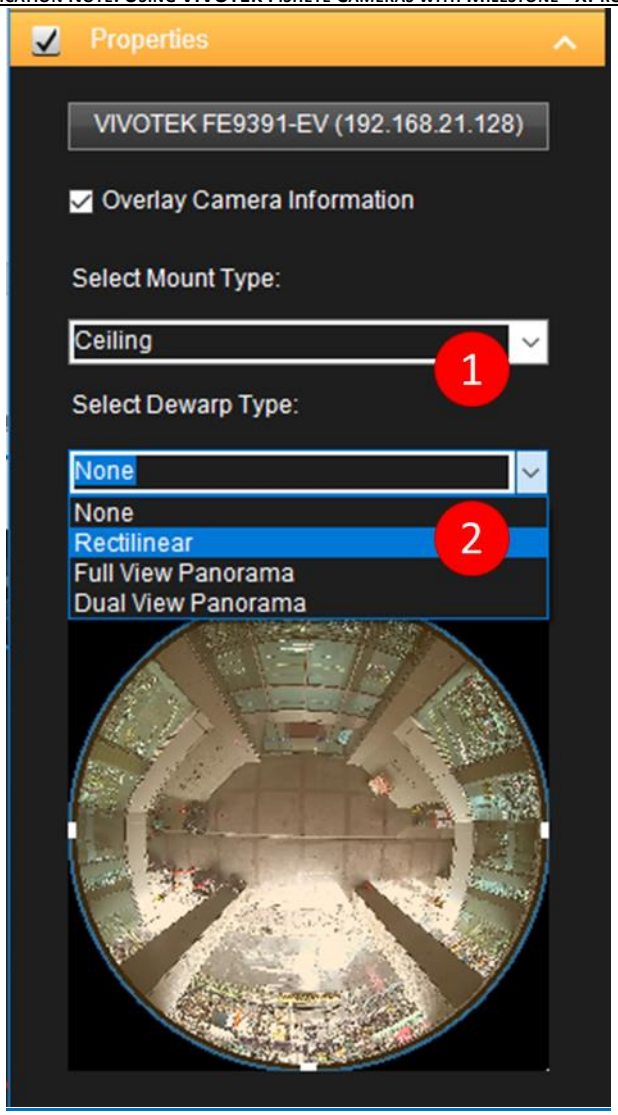
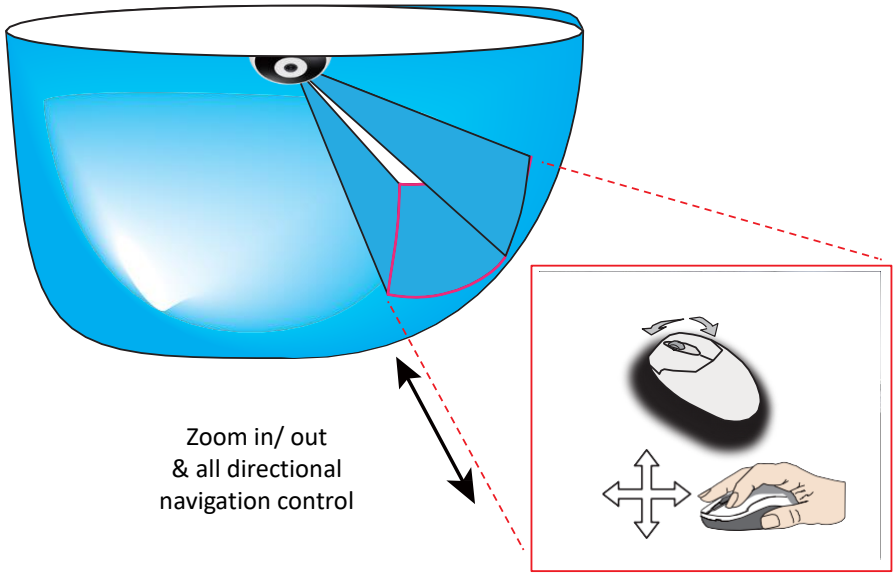


Note: The working theories of different dewarp types are illustrated below:

Rectilinear: (1R, Single Regional View)



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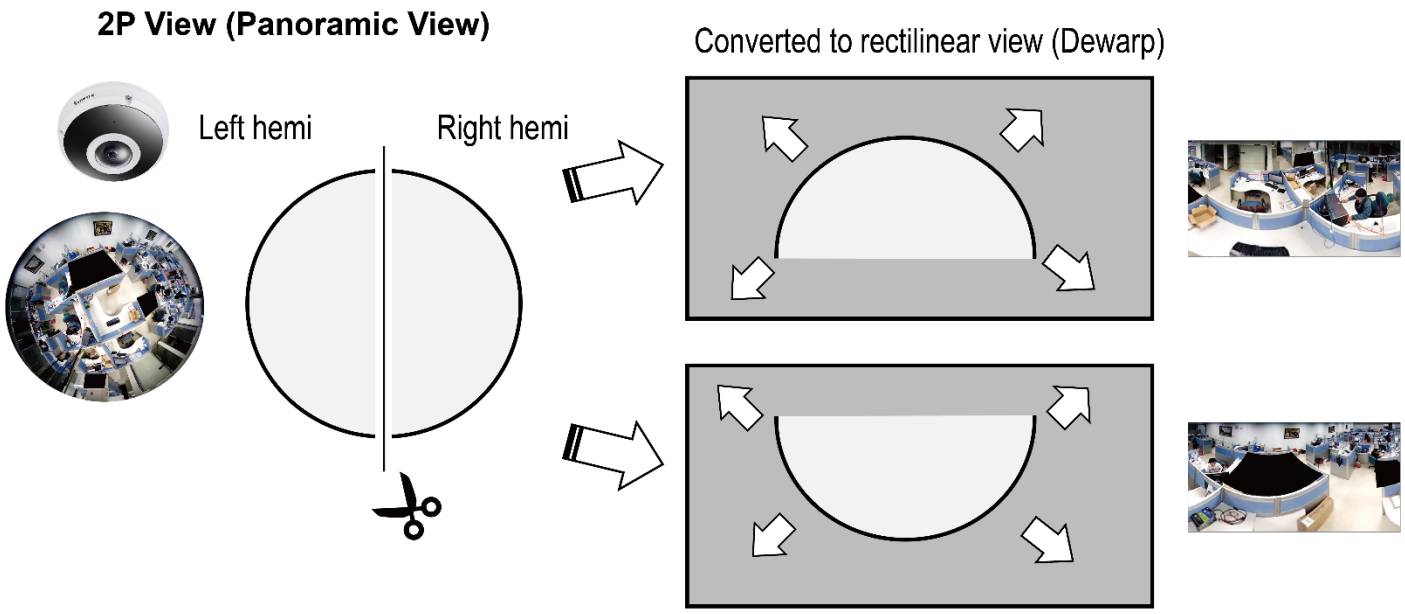
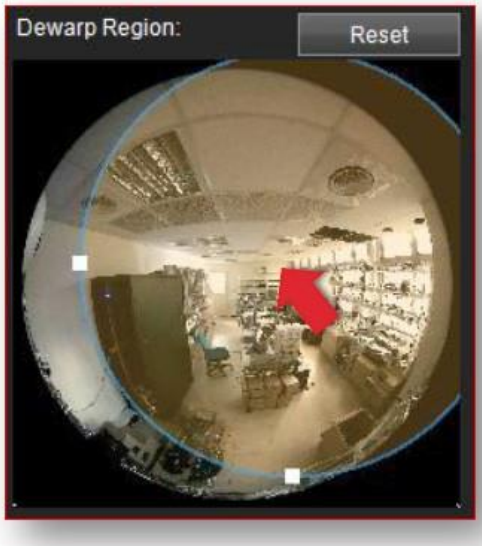
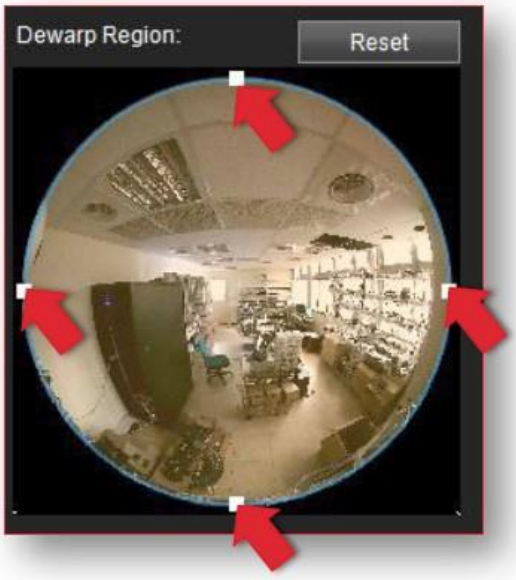
Dual View Panorama (2P, Panorama View)



(8) Although all fisheye camera lens have been adjusted before shipping, sometime fields of view can be away from the center, or that a larger fisheye lens can cover the edges of a dome cover. You can the use the Dewarp Region Tool to slightly adjust the "**Dewarp Region**" in order to produce a more comprehensive view.





(9) You can now click on the "**Setup**" button and return to the "**Live**" view or "**Playback**" window, and exert control on the view cell using a mouse or joystick. Click on a view cell, hold down the mouse button, and swipe your mouse around to change the view angle. Use scroll wheel to zoom in or out.
This revision also provides a **PiP** control window for instantaneous control of the Rectilinear display. You can click and drag the rectilinear area around the full coverage of view to preferred location. You can also zoom in / out, or click and hold down the mouse button to swipe the dewarped view. This PiP window appears at the lower right corner on a Rectilinear view cell (when selected).

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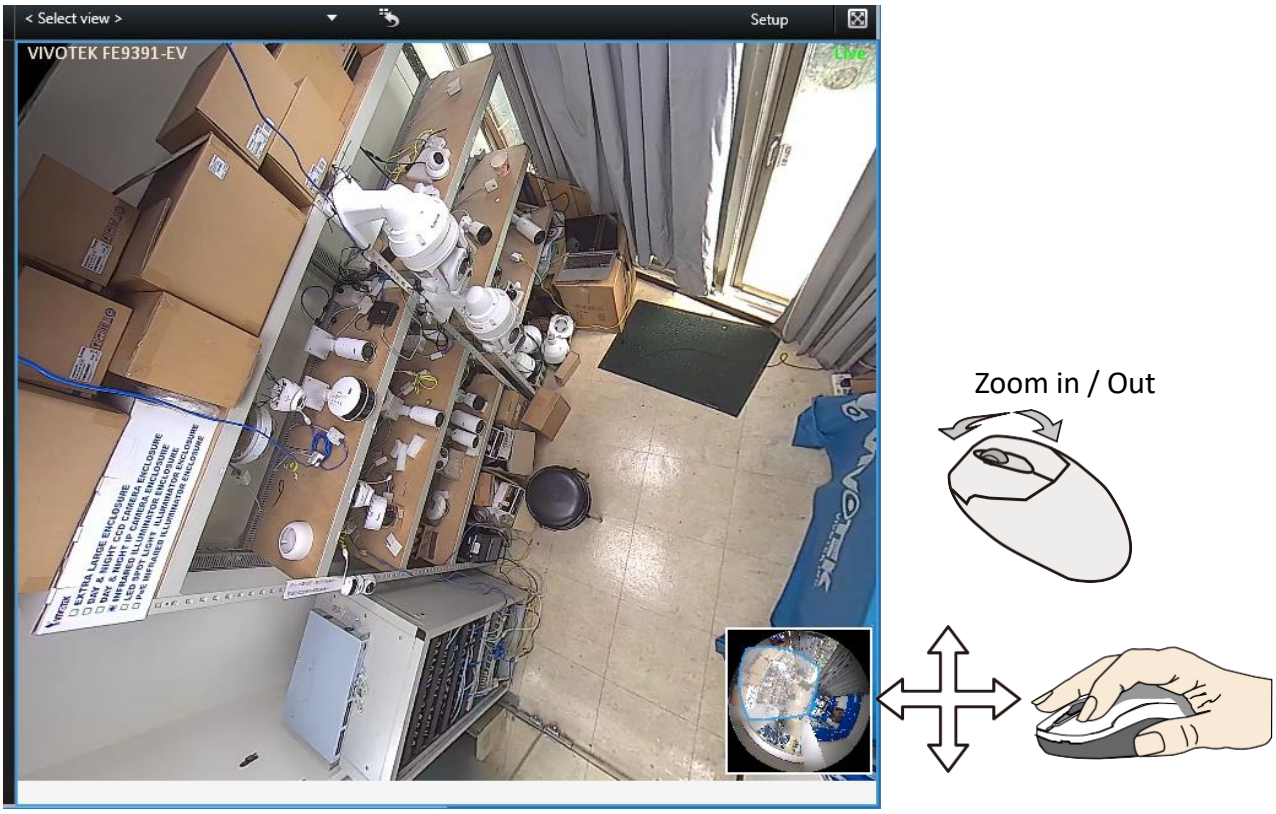

(10) Shown below is the availability of Dewarp modes for different Mout types:

Dewarp mode \ Mount type	Wall	Ceiling	Floor
Rectilinear	Yes	Yes	Yes
Full Panorama	Yes	Yes	Yes
Double Panorama	N/A	Yes	Yes
None (Original Circular)	Yes	Yes	Yes