

IVS - Map module

Table of Contents

1. Introduction, important information.....	2
2. Map.....	2
2.1. Map settings.....	3
2.2. Location.....	5
2.3. Building.....	6
2.4. Level.....	6
2.5. Camera.....	7
2.6. Detector.....	8
2.7. Panorama.....	9
3. Further steps.....	11

1. Introduction, important information





This guide summarizes the configuration settings of the IVS Map module. To learn how to use the map, please review the **Map** chapter in the *IVS User Manual*. For a complete overview of the system structure and configuration, refer to the *IVS Installation Manual* documentation.

2. Map

The map configuration interface is available under the **System Configuration / Map** menu. All cameras in the SITE can be displayed on the map from any viewing angle. Both indoor and outdoor cameras, buildings, cameras on different building levels, and various detectors can be made visible.

You can navigate the map using the mouse. To **move** in the desired direction, hold down the **left** mouse button and drag the pointer. To **rotate** the view, hold down the **right** mouse button and move the pointer sideways. To **tilt** the map, hold down the right mouse button and move the pointer **up or down**. You can **zoom** in or out using the mouse **scroll** wheel.

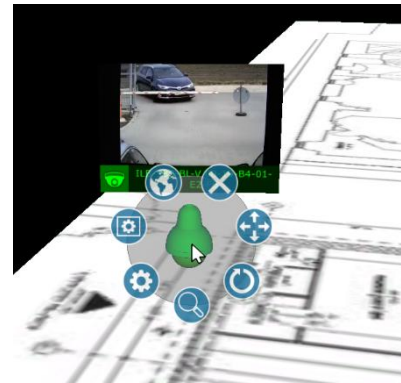
The map has four basic buttons:

-  **Back:** Moves one level closer to the starting point, returning step by step to the Locations view.
-  **Change View:** Switches between axonometric (3D) and top-down (2D) viewing modes.
-  **Switch Images:** Replaces the background image for the selected location/building/floor. If only one background is assigned, pressing the button has no effect.
-  **Show/Hide Captions:** Toggles the display of names for cameras, buildings, and locations.

Each object on the map has its own menu. This menu appears when you right-click on the selected object. The menu contains several object-related functions such as **Delete**, **Move**, **Rotate**, **Scale**, and **Properties**. If the selected object is a camera, the menu will also include options like **Video adjustment** and **Calibrate**. When selecting a building floor, only two functions appear—**Delete** and **Properties**—since the other functions do not apply to a building floor.

Function descriptions:

- **Delete:** Removes the selected object from the map.
- **Move:** Changes the position of the placed object on the map (e.g., the camera can be moved to another corner of the room).
- **Rotate:** Rotates the object (e.g., the moved camera can be turned to face the center of the room again).
- **Scale:** The displayed size of the object can be adjusted to better match the scale of other elements (for example, an office building placed on the map can be much larger than a nearby outbuilding). The scaling factor is shown in the lower-center part of the window (Factor), and by holding the x, y, or z buttons, the model can be scaled along individual axes.
- **Properties:** Allows you to modify the parameters of the placed model. Similar to the window that appears when clicking the **Camera** or **Detector** button.
- **Video adjustment:** Opens the **Image settings** window.
- **Calibrate:** Sets the camera's visible area on the map. Use the **Show/Hide Tips** button for additional help.



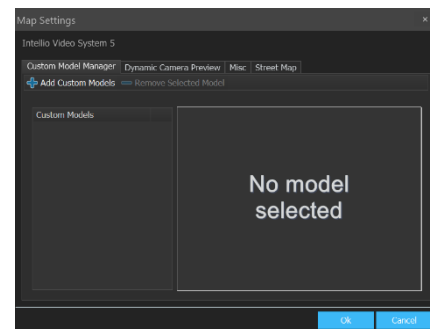
2.1. Map settings

This window allows you to adjust the map display settings, accessible by clicking the **Configure** button in the **System Configuration / Map** menu.

Custom Model Manager

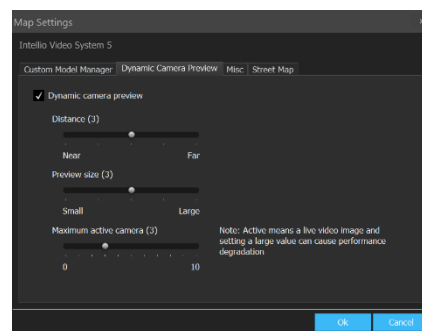
This tab allows you to add custom models so they can appear on the map. Added models can also be removed.

If you need a custom model, it must be created in an external 3D modeling program (we recommend using the free **Blender** software), then the model should be sent to support@intellio.eu so we can convert it to the appropriate format for placement on the map.



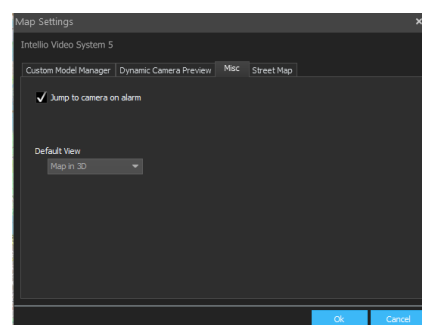
Dynamic Camera Preview

When enabled, a live camera image will appear above each camera model with a low frame rate. You can set how far from the camera the image should appear and its display size. You can also define how many camera previews can appear at the same time—note that displaying too many previews at once may lead to performance issues.



Misc

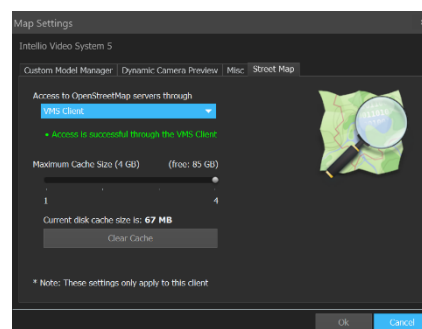
The jump / animation feature can be enabled on this tab. The **Jump to camera on alarm** function detects when a camera sends an alarm and immediately displays the corresponding camera on the map.



The **Default view** dropdown menu sets the initial map view when displayed on the live view panel. The display mode on the panel can be overridden using the **Change View** button.

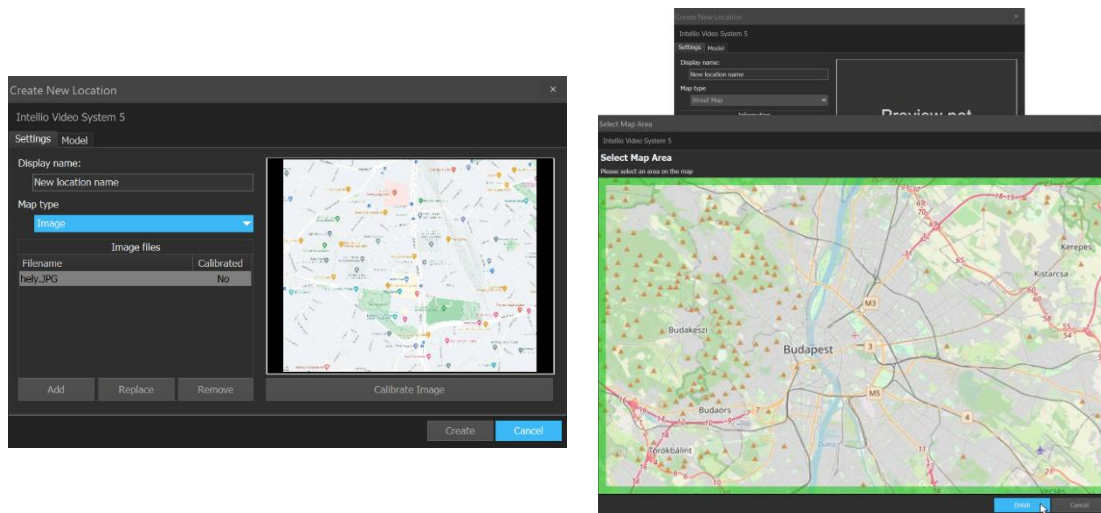
Street Map

IVS allows you to use a real-world map as a location. The system loads and makes the Open Street Map available for selection. You can configure whether the IVS system connects to the Open Street Map servers (<http://tile.openstreetmap.org/>) through the client or the server, depending on your installation environment - whichever device has internet access. A cache is used to speed up map rendering, which uses disk space on the client computer up to the configured maximum size.



2.2. Location

You can add locations from the Map home screen by clicking the **Add Location** button in the **System Configuration / Map** menu. A location represents an area that includes buildings, indoor and outdoor cameras, and detectors belonging to a SITE, usually tied to a specific geographic place. The model symbolizing the location represents this area visually. **Image files** serve as the background or blueprint of the location, typically a map. You can choose the **Map Type** to be a static pre-drawn **Image** or a real map view using the **Street Map** display mode. Using the **Street Map** requires an internet connection, depending on the [Map settings](#).



You need to define the map area you want to actively use with the map function by clicking the **Select Map Area** button. In the pop-up window, you can move around with the left mouse button and zoom in or out using the mouse scroll wheel. The selectable area size is limited, so the system will only accept the selection if a green border appears around the map.

If you choose a Static **Image**, you must calibrate the images for proper display. After adding the image, click the **Calibrate Image** button and follow the on-screen instructions.

Note: During calibration, it is not possible to set perspective images—only top-down images can be accurately calibrated. The street map already includes real-world dimensions and therefore cannot be calibrated.

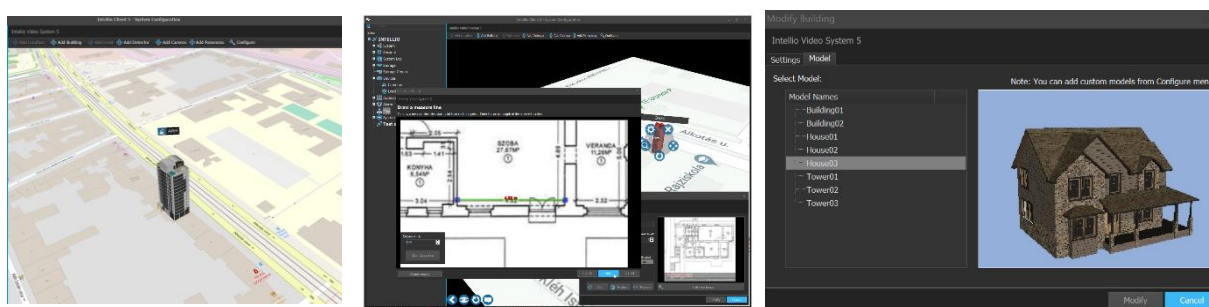
Finally, choose the model that represents the location on the **Model** tab of the settings window, then click the **Create** button. You can enter the selected location by clicking it with the left mouse button, where you can add buildings, cameras, etc., to that location.

2.3. Building

When adding a building, at least the lowest level of that building must be available. After adding the first level (which is always the lowest level—it's not necessarily the ground floor, so in the case of a parking garage, this could be Level -1, -2, etc.), you must calibrate the added image exactly the same way as for a [Location](#). After this, you only need to select the model representing the building. You may also use your own custom model if you upload it in the [Custom Model Manager](#) settings window.

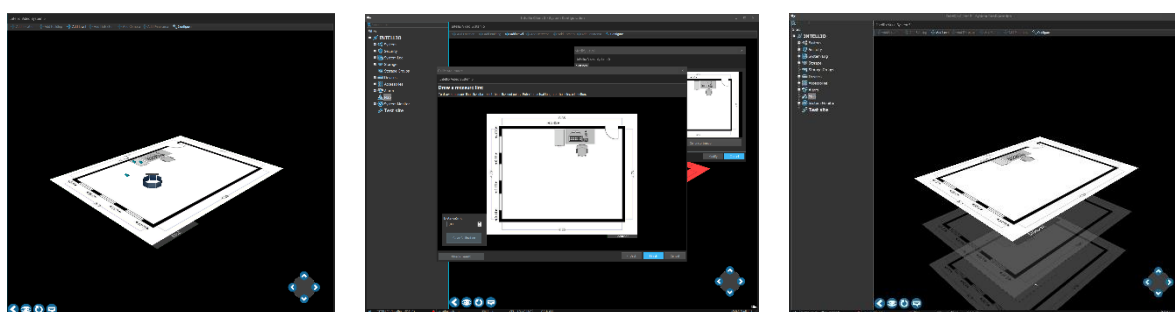
Since cameras can also be placed outside of buildings, this is where you can start adding outdoor cameras as well. Instructions for this can be found under adding [Cameras](#).

To change the default level of the building, open the **Properties** menu of the building. However, new levels can only be added above the already existing ones.



2.4. Level

To create a building level, a floor plan of that level is required. After adding the floor plan, you must calibrate it in the same way as described in the [Location](#) menu.



2.5. Camera

After creating all buildings and levels, you can place the cameras. Click on the selected level, or on the Location map for outdoor cameras, then add the cameras using the **Add Camera** button. Use the three tabs in the window to configure display properties.

Cameras

Select the camera you want to display. By default, this list shows the cameras that can be added (but are not yet placed), but you can enable listing of already added cameras as well. These cannot be placed again on the map.

Model

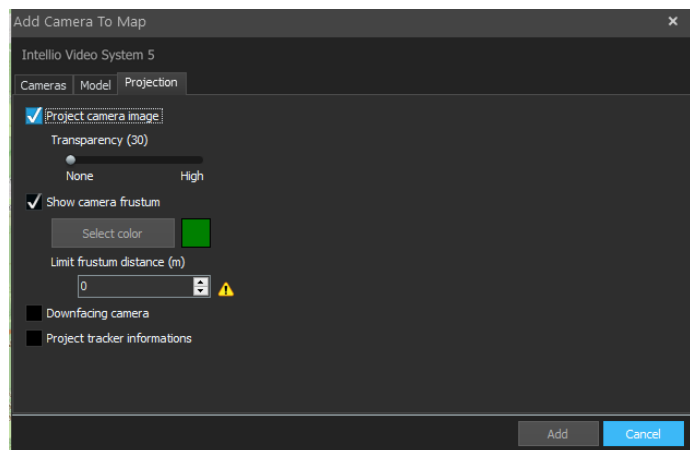
Select the model that will represent the camera on the map. You can also use your own model if you upload it in the [Custom Model Manager](#) settings window.

Projection

Custom configurations specific to the camera. You can set whether the camera should project the camera image or display its field of view, etc.

- **Project camera image:** When enabled, the calibrated camera's live image is projected onto the field of view, with the selected transparency settings.
- **Show camera frustum:** Displays the camera's field of view in the selected color. If the previous "Project camera image" option is enabled, the color setting has no effect.
 - **Limit frustum distance:** Recommended when the displayed image or field of view would extend into neighboring rooms. This function limits how far from the camera the projection is shown.
- **Downfacing camera:** If the added camera is not a PTZ camera but is pointing downward, enable this option. This allows the camera image to be projected onto the floor plan.
- **Project tracker informations:** If you select a motion information type below, it will be displayed on the projected image.







***Note:** This function requires the use of a tracker on the camera.*



After adding the camera, you must calibrate its proper position on the map using the **Calibrate** button found in the camera's menu. The camera menu can be accessed by right-

clicking on the already placed object on the map. Descriptions of other functions can be found at the beginning of the [Map](#) section.

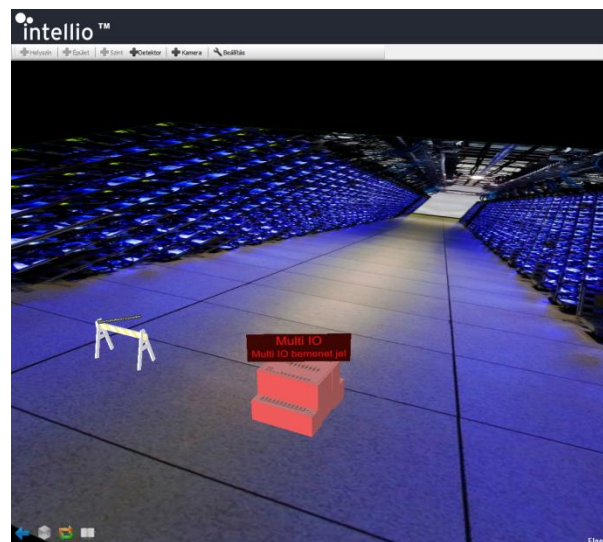
During calibration, the mouse **scroll wheel** adjusts the **field of view**, holding the **left** mouse button adjusts the camera **height**, and holding the **right** mouse button **aligns** the map with the visible area. The camera height and viewing angle are displayed throughout the calibration process. Button meanings:

-  Apply settings
-  Cancel settings
-  Show/Hide edges
-  Show/Hide hints
-  Switch images: If multiple images are assigned to the floor (e.g., different blueprints), this button switches between them.
-  Show/Hide cameras: If another camera is visible within the calibrated camera's field of view, this button can hide or show it.

2.6. Detector

A detector can be added to the map just like a camera. Since cameras display alerts from their associated detectors, only system-related detectors not linked to a specific camera should be added for map display. These detectors have their own dedicated models.

The model associated with a specific detector can be selected on the second tab of the pop-up window after clicking the **Add Detector** button. Using the suggested model is recommended, but the selected model can be changed at any time in the model's **Properties** menu.



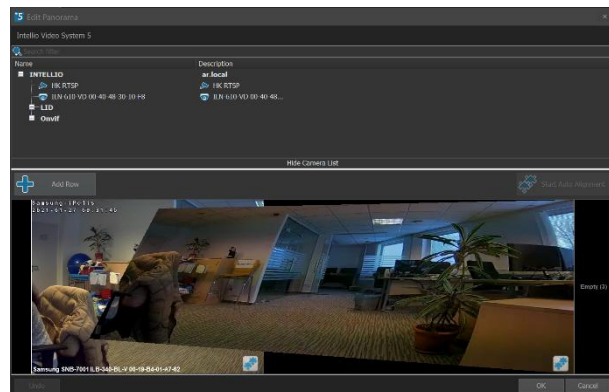
2.7. Panorama

A panorama image is a large image created by stitching together the views of multiple cameras. It is most commonly composed from cameras placed closely next to and/or below one another, where the camera images cover a specific area with slight overlaps between them. For such installed cameras, you can create a panorama view in the Intellio Video System software, so it can later be managed as a single, large image in the client program.

Create Panorama

Each panorama view is linked to a specific location on the map, so it must be created on the map, just like cameras and detectors. Within **System Configuration / Map**, select a location, then press the **Add Panorama** button. In the pop-up dialog window, name the panorama view and select a model that will represent it on the map. After that, press the **Edit Panorama** button.

The editor window consists of two sections: the upper section contains the camera list, from which you can drag and drop any cameras from the domain into the editor area located below. The lower section is made up of panels arranged in one or more rows—this layout forms the final panorama image.



Here, you can create as many rows as needed using the **Add Row** button, or use the toolbar on the left side of each row to remove, clear, shift, or reset the horizontal position relative to the other rows. Horizontal shifting is useful when the cameras in neighboring rows are physically offset from each other in real life, allowing you to compensate for that easily.

You can drag cameras from the upper section onto the panels. In the live view, the full panorama image will be displayed with overlap aligned to the top-left camera. You can align the placed camera images with neighboring camera images in the following ways:

- By moving one of the corner points
- By moving one of the edges
- By moving the entire image (hold down the right mouse button)
- Using automatic alignment (see next page)

Each panel that contains a camera has its own toolbar. To display it, hover the mouse cursor over the panel. The toolbar buttons include:

- **Remove camera:** Clears the panel, removing the camera from it.
- **Reset corners:** Restores the four corner points to their default starting positions.
- **Fill area:** Useful when placing cameras with different aspect ratios in multiple rows. When applied to a panel with a narrower aspect ratio, it adjusts to match the wider panel, filling in the empty space caused by the difference in aspect ratios.

- **Assign PTZ preset:** If you have a PTZ camera with a preset that covers the area shown by the selected camera, you can set it so that clicking **Shift + left mouse button** on the corresponding area in the live panorama will move the PTZ camera to that preset position. After pressing the button, select the PTZ camera and the appropriate preset.

Auto alignment

You can also align neighboring images with the help of computer-assisted matching. To do this, you only need to set a few reference points, based on which the software will calculate and apply the necessary transformations. A reference point is a specific spot in the image that is also visible in the neighboring camera image—meaning it lies in the overlapping area between the two camera views.

To align two adjacent images, place 2 points on each image at the start and end of their common overlapping area. The farther apart the two points are (within the image) and the more precisely you place them, the more accurate the alignment will be..

To start automatic alignment, select the camera images to be aligned by clicking the **Auto Alignment** button located in the bottom-right corner of the camera images. The Auto Alignment button is only available for camera images adjacent to an already selected camera

A toolbar with two buttons will appear on the selected camera images, allowing you to delete the current reference points or remove the camera image from the automatic alignment process. A shaded area will also appear, where reference points cannot be placed. Inside this area, messages will guide you through what still needs to be done for proper alignment

To place a reference point, simply click in the allowed area of the camera image. To move an existing point, drag it to the desired position. The software will mark matching reference points with the same color to indicate which ones will be aligned together..

After setting the required reference points on all selected images, the system will show a red or green border around the alignment panel to indicate whether the setup is valid. If alignment fails, an error message will appear inside the border to help you fix the issue. Once all borders are green, click the **Auto Alignment** button in the top right corner of the window to complete the camera image alignment.

If you are not satisfied with the result, you can manually fine-tune the alignment using one of the methods described earlier, or click the **Reset Corners** button on the top toolbar to revert to the state before alignment.

3. Further steps

For an overview of additional system settings, please refer to the *IVS Installation Manual* documentation.