COMBINED CAMERA VIEW

CREATING AND DISPLAYING A CAMERA GROUP

Combination of several Dallmeier camera systems from one location into a single panoramic view

How-To

In this quick guide you will learn how to

- use **AutoCalibration 2** to quickly and easily combine several Dallmeier camera systems from one location (e.g. Panomera® multifocal sensor system + Domera® OS single-sensor camera, mounted on the same camera pole) to form a so-called camera group.
- display a camera group in **SeMSy® Compact** as a "Combined Camera View" in a single split (live or playback).

Requirements for Creating and Displaying a "Combined Camera View"

- Latest release version of **AutoCalibration 2**
- Latest release version of **SeMSy® Compact**
- **SeMSy® Compact Pro Dongle**
- **DLD - SC Combined Panomera® View** (license for the use of the function for displaying combined Panomera® systems in **SeMSy® Compact**)

The above mentioned license also supports the display of "Combined Views" arranged with Dallmeier single-sensor cameras, such as:

- Single-sensor cameras with Domera® OS
- Single-sensor cameras of the 5250 & 5450 series (as of version 11.1.1.17)

In addition to the well-established combination of several Panomera® multifocal sensor systems to form a group ("Combined Panomera® View"), the following "Combined Views" can be configured in any order:

- Panomera® multifocal sensor system + (Domera® OS) single-sensor camera + …
- (Domera® OS) single-sensor camera + (Domera® OS) single-sensor camera + …

Depending on the requirements, more than two Dallmeier camera systems can be arranged in any combination to create a "Combined View" (see also "Practical Tips" on page 6).

The following example configuration shows how to combine two Domera® OS single-sensor cameras to form a camera group.

AutoCalibration 2 – Step 1

(1) Start **AutoCalibration 2**.
(2) Open camera #1 (group master) for new camera group in **Expert Mode** (enter camera info and click **OK**).
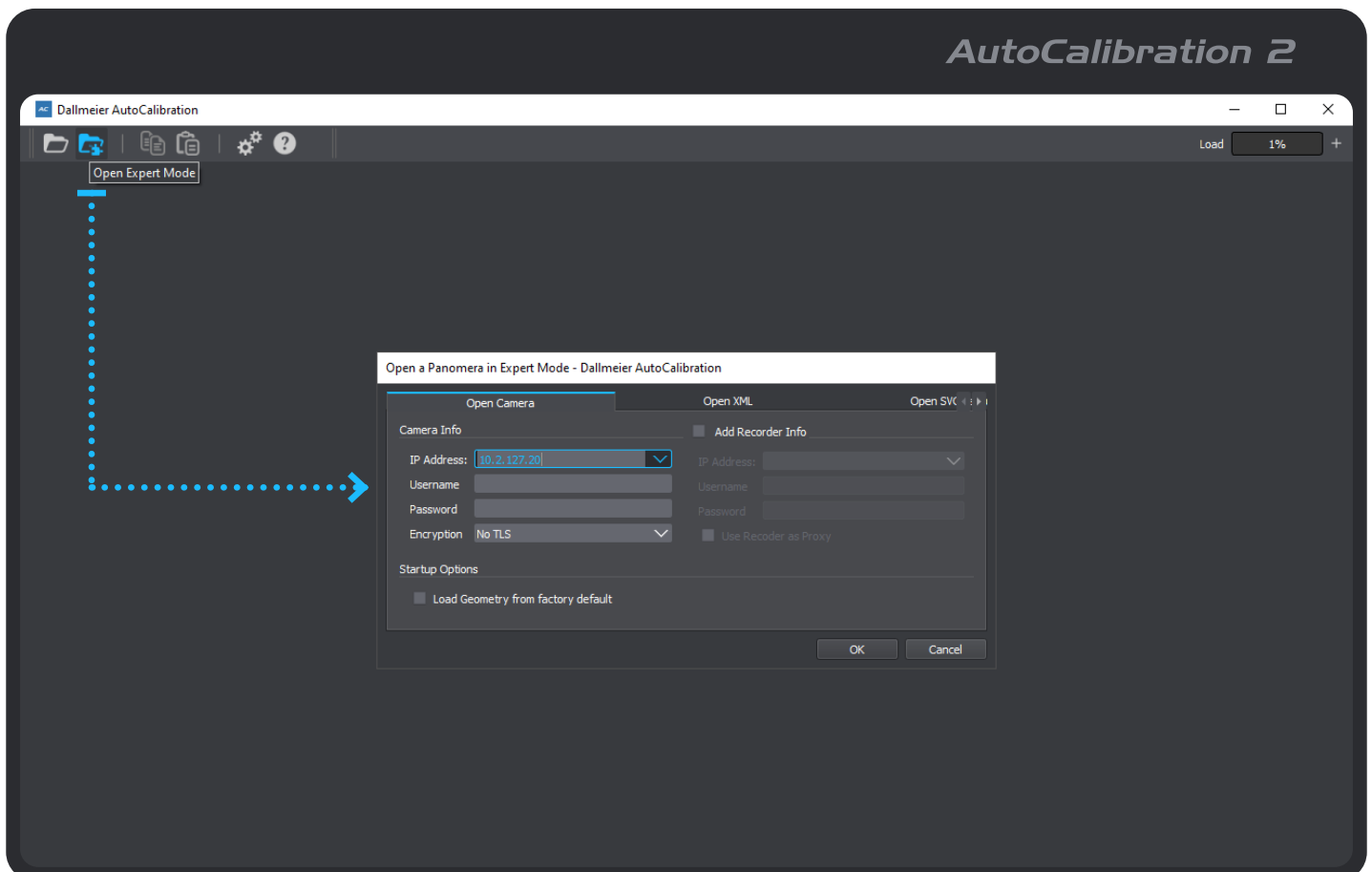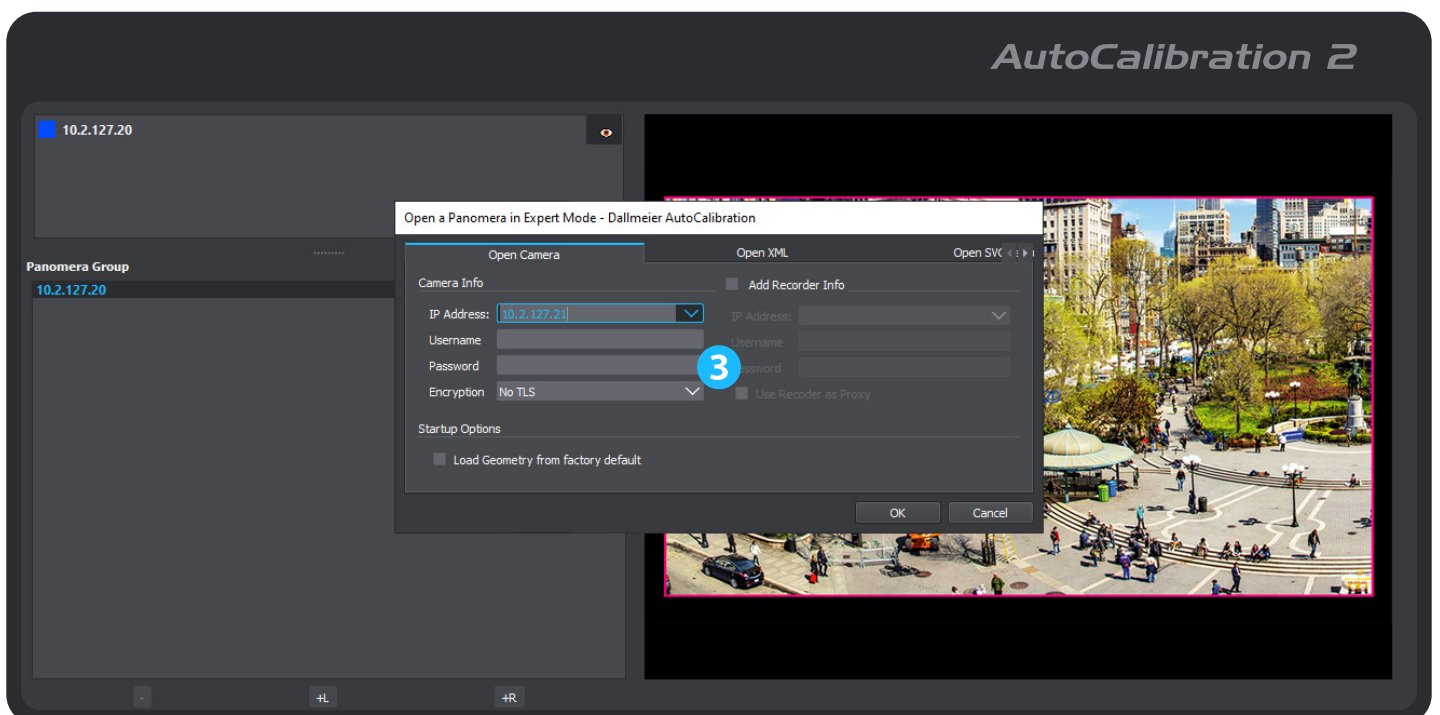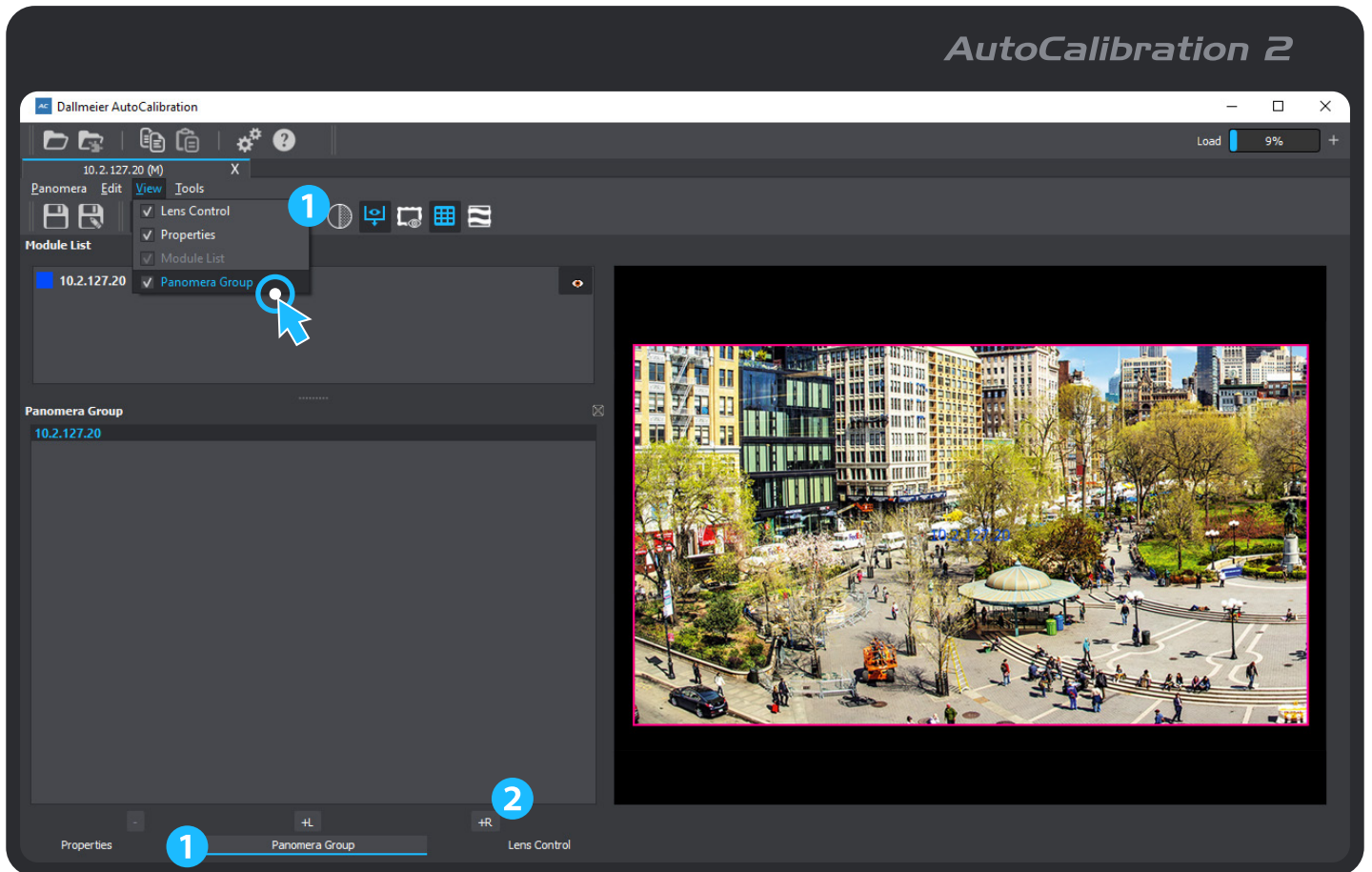
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AutoCalibration 2 – Step 2

(1) Make sure the **Panomera Group** feature is enabled (**Menu Bar** > **View**) and the appropriate tab is selected.
(2) Click **+L**(eft) or **+R**(ight) to add camera #2 to the left or right of the group master.
(3) Enter the camera info for camera #2 and click **OK**.
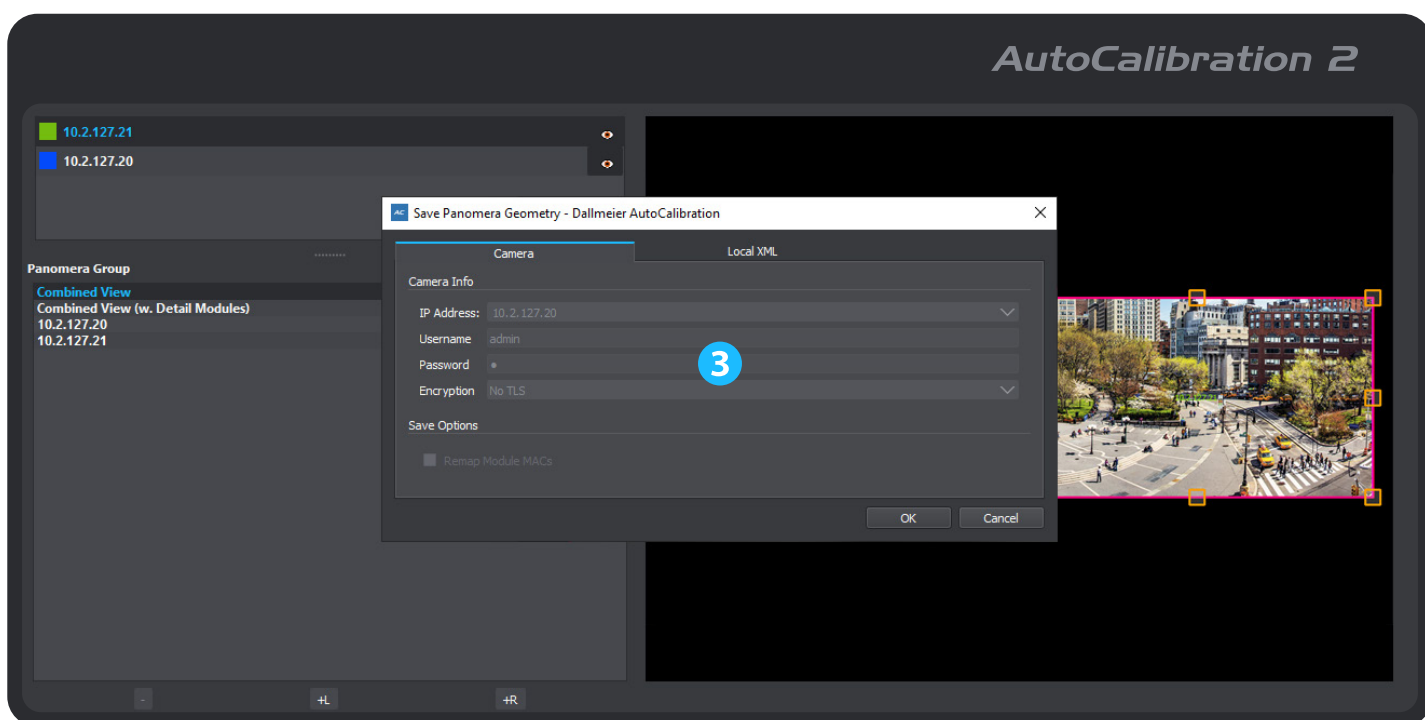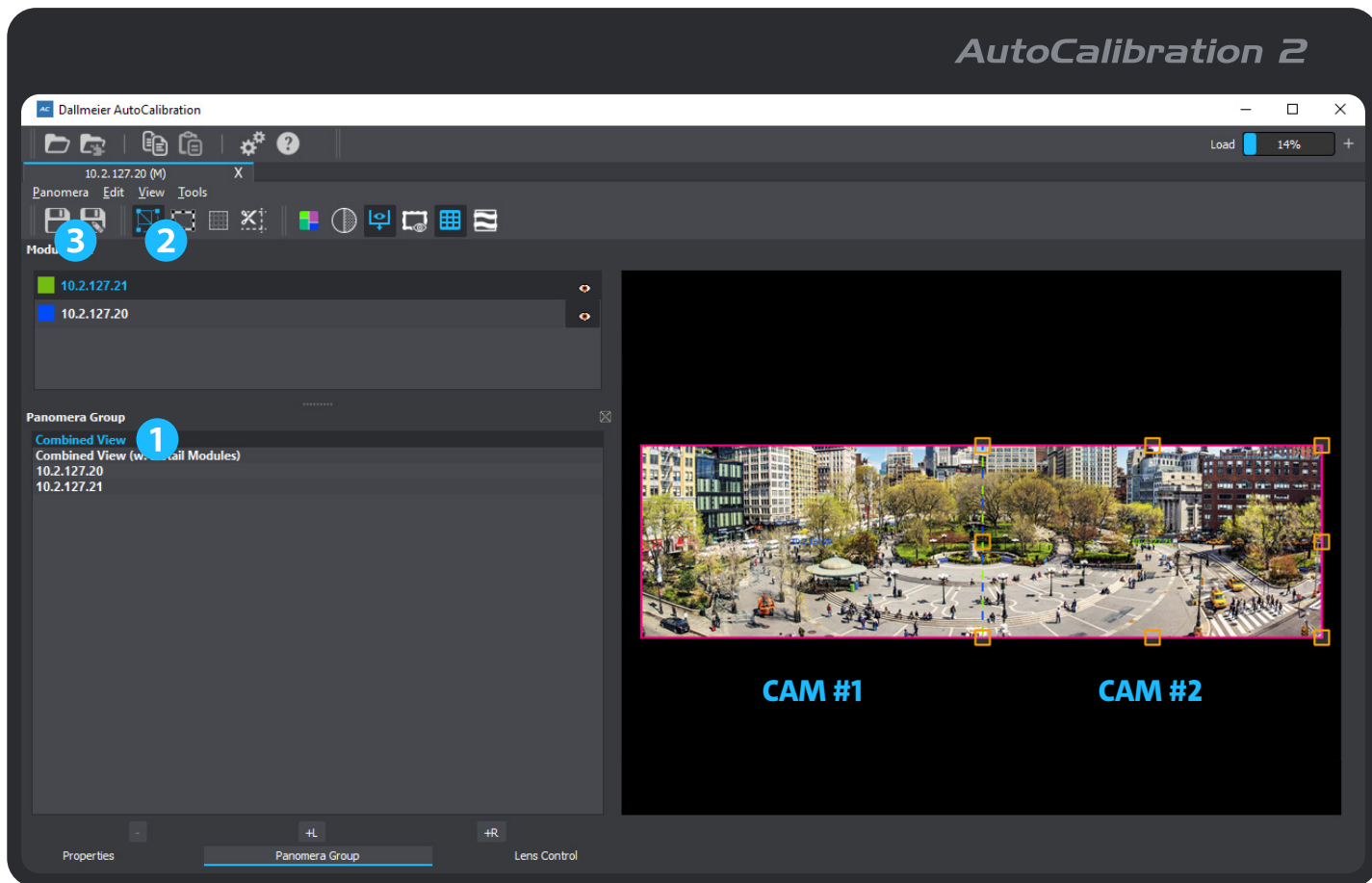
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AutoCalibration 2 – Step 3

(1) Select **Combined View**.
(2) Use the available tools to optimize for seamless camera transitions (for experienced users only; also note "Limits of the System" on page 6).
(3) Save the geometry of the new camera group to camera #1 (group master).

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Camera User Interface (e.g. Domera® OS)

(1) Open the web-based user interface (**CONFIG** area) of the group master and select the **Camera group** menu item to display the corresponding dialog (only available if the camera is part of a camera group).

(2) If necessary, change the default multicast IP address and port number for group synchronization between the group master and the linked cameras (see notes below).

IMPORTANT

Group synchronization requires "fully managed" switches that support IGMP snooping (for IPv4 multicast traffic).

The recommended address range for local use (LAN) is **239.0.0.0** to **239.255.255.255**, as this range is considered non-public or private within an organization and is not routed out to the Internet (WAN).

Within a shared IP network, the **Group synchronization IP address** and the **Group synchronization port** must be assigned only once per camera group to avoid conflicts in the delivery or proper routing of synchronization data packets.

If necessary, contact your network administrator for further information and assistance.

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SeMSy® Compact Pro – Step 1

(1) Start **SeMSy® Compact Pro** and add the group master as a new device.

(2) Open the context menu of the group master in the device tree (right mouse button) and enable **Panomera Mode** > **Combined**.
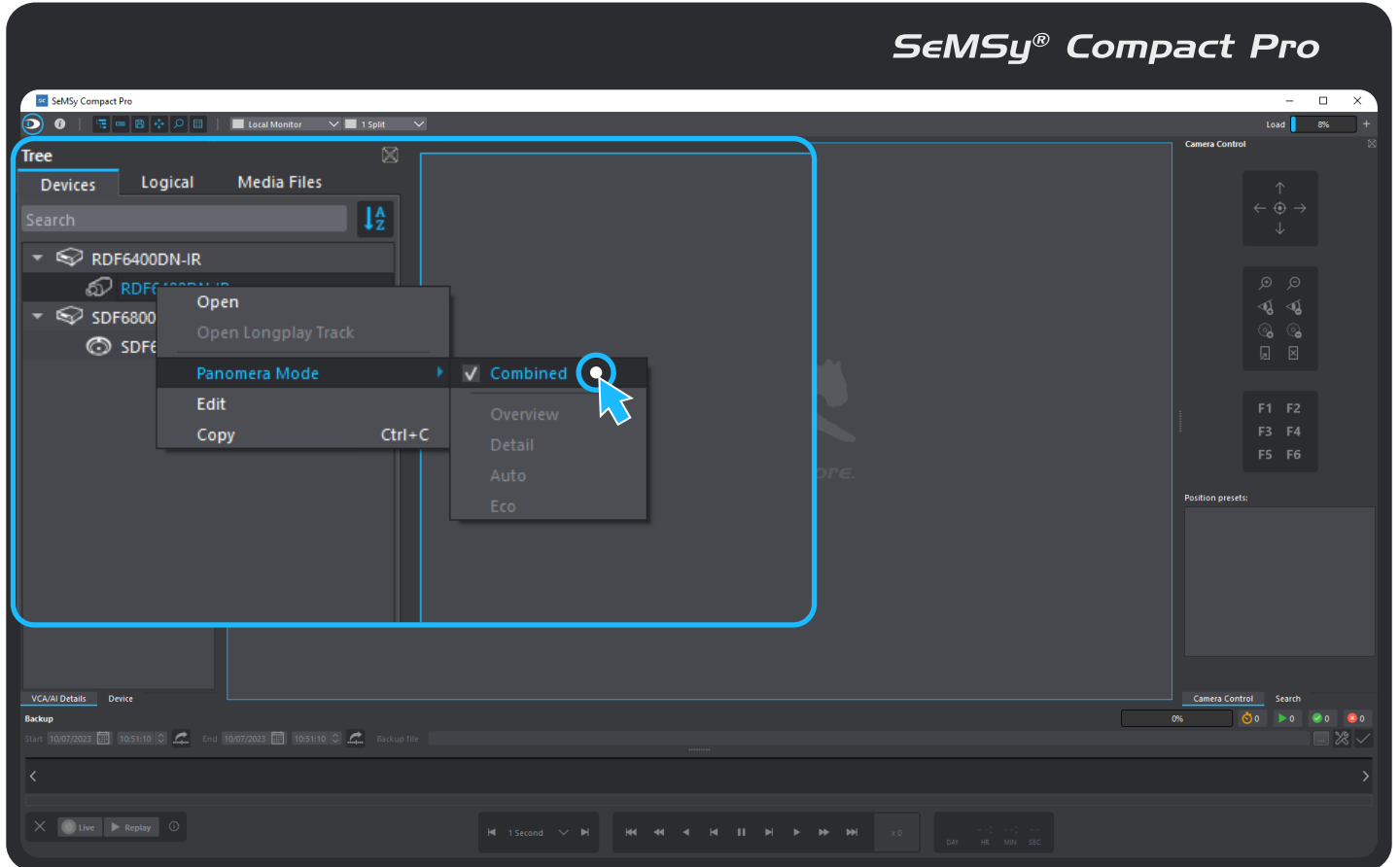
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SeMSy® Compact Pro – Step 2

(1) Drag the group master from the device tree to any split.
(2) Use the mouse wheel to zoom in and out, and hold down the left mouse button to move the displayed portion of the image (or use a monitor wall for a detailed overall view).
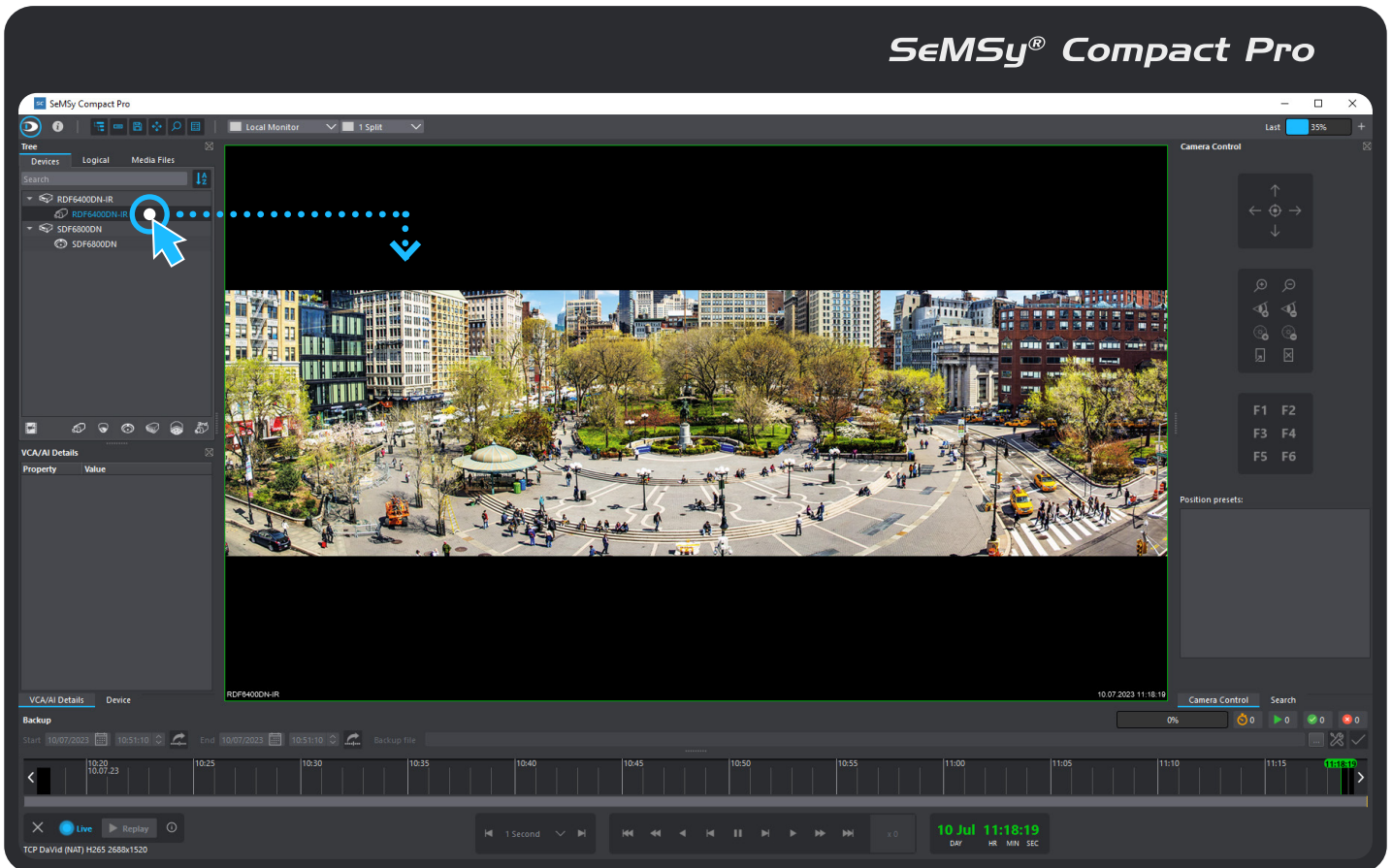
Practical Tips

In order to achieve a seamless viewing experience and the best possible results when combining a set of cameras (e.g. in terms of the overall viewing perspective), the following recommendations should be followed before starting your project:

– Mount all camera systems at approximately the same height.
– Mount adjacent camera systems as close together as possible.
– Set the resolutions and frame rates (encoder settings) of all camera systems to the same values.
– If possible, set the focal lengths of all camera systems to nearly the same values (does not apply to Panomera® as it is fully calibrated at the factory).
– If possible, tilt all camera systems at the same angle.
– If possible, focus all camera systems at the same focusing distance (focus position).
– Ensure sufficient image overlap between adjacent camera systems.

Limits of the System

Observe the following principles when creating a camera group:

– For physical-optical reasons, not all image elements in the foreground and background of the captured scene can always be exactly aligned with each other at the respective camera transitions in combined camera systems, since objects at different spatial distances from the image plane always have a different parallax offset (so-called parallax error). As a general rule, the closer a captured object is to the image plane, the more noticeable the parallax error will be in the transition areas between two combined image capturing units (camera systems).
– Diurnal and seasonal fluctuations in humidity and temperature, and the resulting movement of components or material stresses (e.g. of poles and brackets) can affect the overall image (e.g. changes in perspective and edge transitions), especially in more distant areas of the scene.

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