



www.AdvancedCCTV.co.uk

01483 608588

LUXRIOT EVO Monitor Training Manual



May 2019

Luxriot EVO Monitor User Guide

10 Viewport Overlay

Each grid cell in live view can be thought of as a 'slot' - a rectangular part of the layout - and it is called a **viewport**. Every viewport can accept channel video and [maps](#), including geo maps.

In addition to the picture itself, every viewport contains detailed information about the video stream, as well as several quick controls and toggle buttons, including PTZ controls. These elements **overlay** the video stream, meaning that the actual video does not contain them and they only exist as a part of GUI for enhanced user interaction.

The main overlay items are briefly explained below. Also, you will find some more details on some of the controls in the [Application settings](#) and in the [Video overlay](#) sections.

Live View



Selected viewport with active live stream

The following overlay controls are available in live view:

- Upper-left: general viewport controls
 - **X** - close live stream and free viewport - available with or without viewport selection
 - viewport **lock status**: unlocked (default) or locked; unlocked means that the viewport can be used for map/camera pop-up
 - **camera name**
 - [user buttons](#), if assigned
- Upper-right: current time on the server from which the device originates
- Lower-left: **stream details**
 - recording status: X = not recording, yellow arrow = recording
 - motion detector status: running = motion present, standing still = no motion detected
 - video codec of the stream
 - picture resolution, abbreviated
 - stream frame rate, FPS
 - stream bitrate, KBytes/s or MBytes/s
- Lower-right: **controls**; enabled items are highlighted yellow
 - [instant playback](#) (not available if there are no recordings)
 - PTZ toggle: [PTZ HUD](#) and bottom panel ON/OFF
 - [DPTZ toggle](#)
 - [motion grid](#) ON/OFF
 - incoming audio ON/OFF (if enabled and supported by camera/software integration)
 - audio OUT: press and hold the microphone to speak (control is present only if the feature supported by camera/software integration)

Luxriot EVO Monitor User Guide

- [substream](#): auto/main/substream
- aspect ratio (auto/stretch to fill viewport/original)
- notification panel toggle
- [snapshot](#) export to library
- Bottom: [PTZ controls](#)
 - Presets
 - Tours
 - HUD (Heads Up Display) ON/OFF
- Centre: [PTZ HUD controls](#)
 - Pan and tilt arrows
 - Zoom slider
 - Iris slider
 - Focus slider

Live view has its own **notification panel** for each channel, which can be turned ON and OFF by using the notification panel toggle control in the bottom-right-hand corner of each viewport. It contains recent stream errors, e.g., PTZ related errors, which have occurred since the time the channel was opened for live view.



Notification panel containing errors for a disconnected stream



The overlay control set may vary depending on device capabilities and settings. For example:

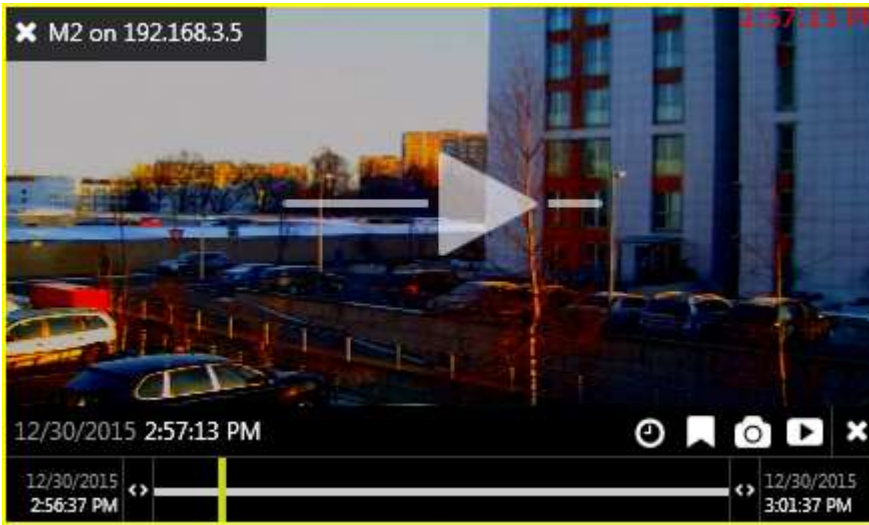
- if no archive is recorded for the target stream, instant playback will not be available
- for PTZ-incapable cameras, PTZ toggle will be absent
- substream toggle will not be displayed when device only has one stream
- audio OUT will not be displayed if this feature is not supported by camera or is not implemented on the software side etc.

Overlay elements can be modified in [Application Settings](#), which are reachable via main menu by clicking *Edit* -> *Settings*. Note that overlay parameters are defined for the whole application and cannot be set separately for the application instances (windows) and/or individual devices.

Luxriot EVO Monitor User Guide

Instant Playback

Overlay elements in the [instant playback](#) mode are different from those in live view.



Instant playback in a live mode viewport

The following overlay controls are available in the instant playback mode:

- Upper left:
 - **X** - close live stream and free viewport
 - viewport **lock status**: unlocked (default) or locked; unlocked means that the viewport can be used for map/camera pop-up and may therefore be replaced by other camera at any moment
 - camera name
- Centre: **play/pause**
 - click to play
 - drag to the centre of the line to pause
 - drag right to go fast forward
 - drag left to rewind fast
 - release from dragging to continue normal playback
- Bottom right: **controls**
 - go to specific time (keyboard shortcut: Space)
 - create a bookmark with current timestamp
 - take a snapshot
 - automatically export loaded footage
- Bottom: **timeline**
 - use the <> arrows to adjust the loaded footage time boundaries (which, by default, are the last five minutes)
 - drag right to go forward in time
 - drag left to go backwards in time
 - the vertical yellow line indicates current playback moment, drag it anywhere or click to move along the timeline

Luxriot EVO Monitor User Guide

Sequence Explorer

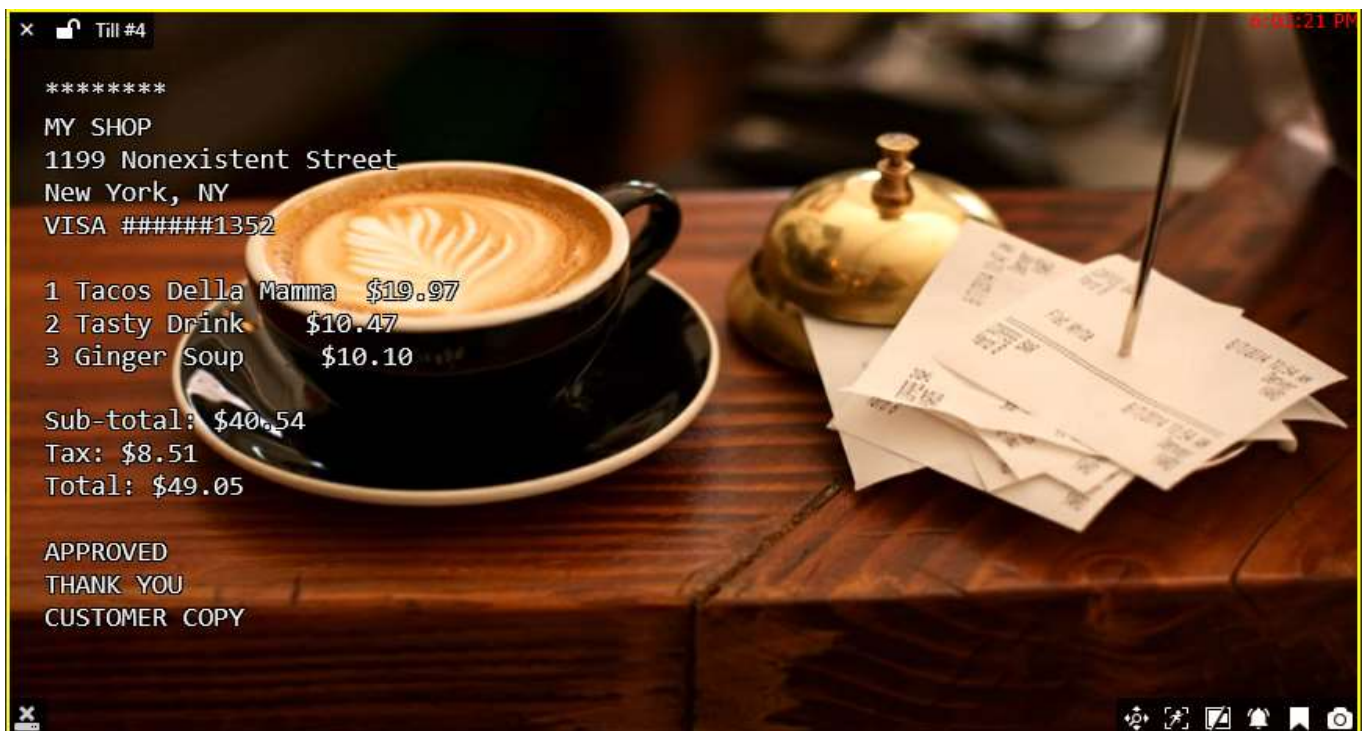
Once you have selected a fragment or a set of fragments, the overlay controls in the bottom right corner of the selection offer the following possible actions:

- **Magnifier** button: make a new sequence out of selected fragments; use the *History* controls <> in the upper panel to go back
- **Play** button: play selected footage in [archive playback](#) mode
- **Video** button: export video from the selected time range (no additional *Set time range* window is displayed)

More detailed control and operation descriptions for the sequence explorer can be found [here](#).

Text Overlay From Data Sources

Textual data from external [data sources](#), if configured, will appear embedded with the live video stream.



Live video stream with text overlay

Channel Shortcuts aka Portals

Channel shortcuts, if pre-configured in Luxriot EVO Console, appear in live view as video overlay elements. Single-clicking these will pop up the target video channel in the same viewport.

Luxriot EVO Monitor User Guide



Shortcuts to other channels in live view

Read more about visual links in the [Video overlay](#) section.

Maps

Maps and geo maps have general overlay controls in the upper left corner:

- **X** - close the map and free viewport - available with or without viewport selection
- viewport **lock status**: unlocked (default) or locked; unlocked means that the viewport can be used for map/camera pop-up
- **map name**

Every map also has interactive **markers** (per-configured in Luxriot EVO Console):

- double-clicking channels* makes them pop-up in the first available viewport (either empty or the first non-locked one)
- maps* links will make the target map pop up in the same viewport
- layouts* will also pop up and replace the current layout or layout sequence
- double-clicking user buttons will trigger actions, which are associated with them
- click a door marker to see the list of available actions

*Remember that every Luxriot EVO Monitor window can be set to accept either individual map/channel pop-ups or layout pop-ups, but not both. This can be changed in the [multidisplay setup](#). Also, you can change the interaction mode from double-click to single-click in the [Application settings](#).

Luxriot EVO Monitor User Guide

11 Substreams

Substream is a lower resolution video used for reducing Luxriot EVO Monitor PC resource usage (CPU, network) for live view display. Also, it is possible to play back secondary streams instead of high resolution video on low bandwidth connections. For example: main stream for recording can be set to 1920x1080 at 30fps and substream - to 640x480 at 15fps, which would provide much lower load for Luxriot EVO Monitor PC to display video stream. This allows to have high quality recordings combined with the ability to view many video streams on a low-performance Luxriot EVO Monitor PC and with limited bandwidth.

Both streams are available for live view and for recording (the latter is configured via Luxriot EVO Console). The live stream selection is configured to *Auto* by default, which means automatic switching between higher/lower resolution streams depending on the image size in order to save network and CPU resources. For instance, Luxriot EVO Monitor may show a high-resolution stream if you view one camera at a time, but if you go to 4x4 view, Luxriot EVO Monitor will automatically switch all the cameras to substreams, if they are available. In multi-channel views, the application compares each viewport size to resolutions of both channel streams and decides, which one is better, based on similarity to the output viewport size.

Luxriot EVO Monitor application has the following visual indication for substreams in **live** view as a viewport overlay item (bottom right):



Automatic selection between high and low resolution (based on viewport size)



High quality picture



Low quality picture (substream)

When no substream is available, the viewport overlay indicator simply will not appear at all for the target channel.

Substreams must be activated on your device via Web browser and, for some devices, this can be also done in the stream properties in Luxriot EVO Console. Please verify camera performance to make sure substream can be handled by the camera along with the other enabled features: some devices tend to drop the overall FPS with the second stream turned ON.

Most cameras provide the second stream as a primary stream image scaled to fit the low resolution. However, some devices crop the centre of a high-resolution image to fit the smaller frame, and thus the substream picture appears as if it were zoomed in. Keep this in mind when you are using substream for live view and especially for software-side motion detector analysis.

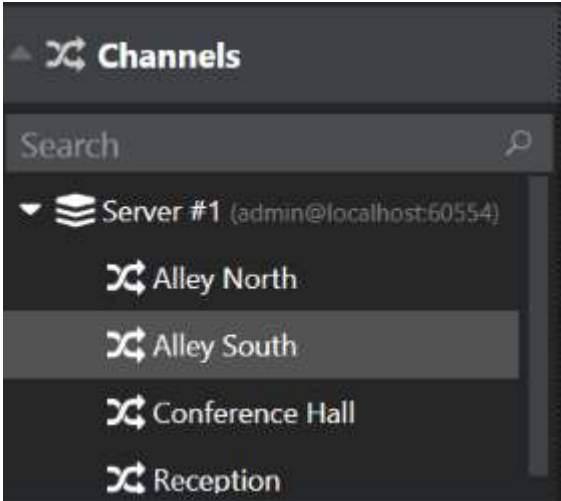
If both main and secondary streams are configured for **recording**, the target channel will be expandable in playback mode and will have both tracks available for playback.



Substream footage in playback mode

12 Channels

All the channels from connected servers are listed in the *Channels* section of the *Resources* section on the left. If the server connection has the *Merge resources* option ON, all resources will be shown together without per-server grouping. Note that channels are displayed according to the logged user privileges.



Channels section

Channels are loaded with visual groups, if there are any; otherwise, they are simply listed under the relevant server name. Use the *Search* field above the channel list to quickly find a specific channel.

Double-click or drag and drop desired channels onto the layout viewports on the main live/playback window to view stream contents. For secondary displays, use drag and drop method only.

When you double-click channels in live/playback view, they fill viewports in the following manner:


- first, all the empty viewports are filled - from top to bottom, and from left to right;
- then, the filling sequence starts again from the very first viewport.

To remove any channel from live view, click the overlay control *X* button next to the camera name in the upper-left-hand corner of the viewport.

Luxriot EVO Monitor User Guide

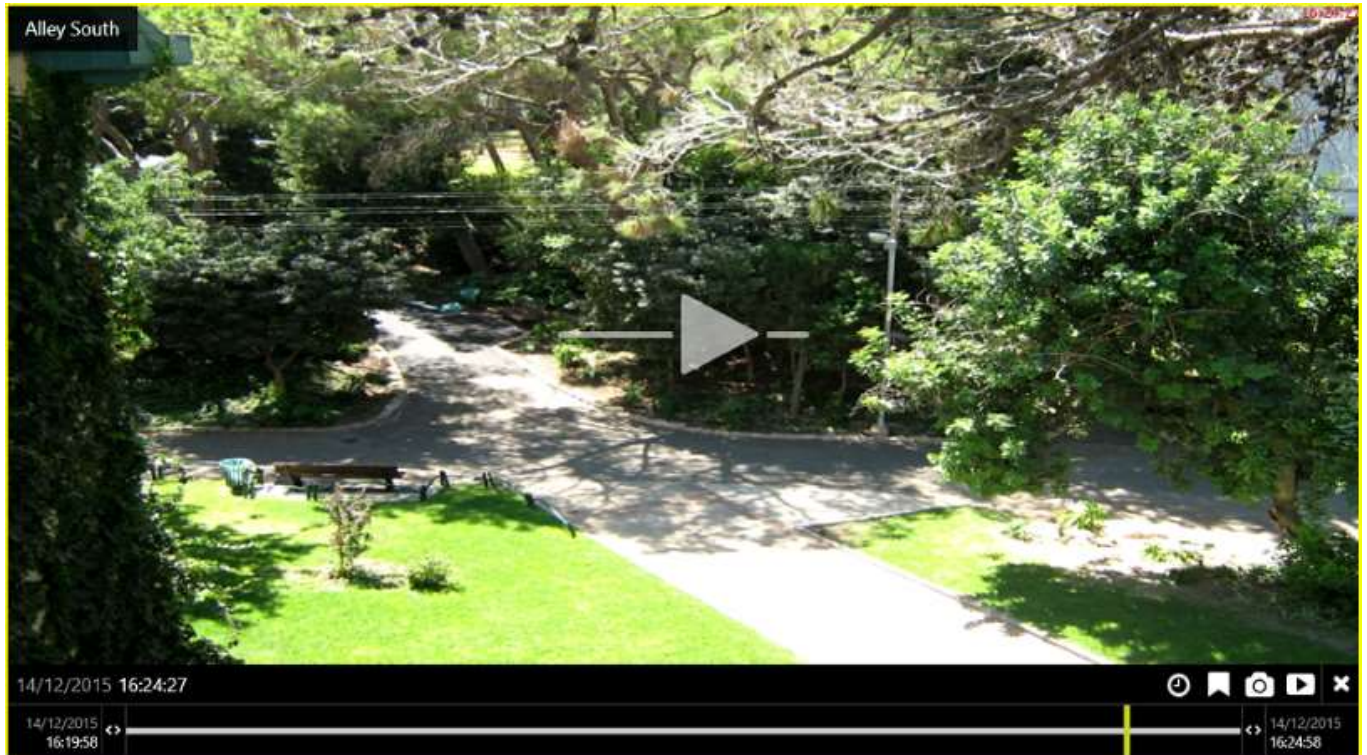
17 Instant Playback

Interactive live view mode gives you the opportunity to **browse the archive right in the same viewport**, without having to switch to the playback mode. This allows you to view recent footage for selected channels, while still having live view displayed for other devices. By default, footage is loaded for the previous **five minutes** and the playback starts **five seconds** before the current moment; use the <> timeline boundary controls to change time range by clicking and dragging mouse to the right (zoom in) and to the left (zoom out) of the <> arrows.

 This mode is only available for channels that have **recording enabled**.

To enable instant archive playback, use the *Play* button **overlay control** in the bottom right corner. The channel will automatically switch to playback mode, allowing you to select timestamps, create bookmarks and export snapshots/video clips. To exit instant playback mode, use *X* in the overlay controls' bottom right section.

Instant playback mode can be enabled for one, multiple or all viewports in the current layout: you can switch between live and instant playback viewports without any limitations. This archive presentation mode is also used when investigating data from [external services](#) and from [data sources](#) in the corresponding Luxriot EVO Monitor tabs.



Instant playback mode

Luxriot EVO Monitor User Guide

The following **overlay controls** are available in the instant playback mode:

- Upper left:
 - **X** - close the stream and free viewport
 - viewport **lock status**: unlocked (default) or locked; unlocked means that the viewport can be used for map/camera pop-up and may therefore be replaced by other camera at any moment
 - camera name
- Centre: **play/pause**
 - click to play
 - drag to the centre of the line to pause
 - drag right to go fast forward
 - drag left to rewind fast
 - release from dragging to continue normal playback
- Bottom right: **controls**
 - *Play* button: switch to regular multichannel playback (current layout will be used)
 - go to a specific time (keyboard shortcut: *Space*)
 - create a bookmark with current timestamp
 - take a snapshot
 - [export](#) loaded footage as a video clip (current timeline boundaries will be used)
- Bottom: **timeline**
 - use your mouse wheel to **zoom** the timeline in and out (mouse position will be used as centre)
 - use the <> arrows to adjust the loaded archive **time boundaries** (which, by default, are the last five minutes)
 - drag right to go forward in time
 - drag left to go backwards in time
 - the vertical yellow line indicates **current playback moment**, drag it anywhere or click to move along the timeline
 - the narrow white horizontal line shows recorded **video**
 - the cyan line (a little bit wider than the white one) indicates **motion**
 - the blue line (a little bit wider than the cyan one) shows recorded incoming **audio**
 - the wide transparent white line denotes **VCA metadata**
 - **bookmarks** look like little red flags on the timeline

Instant playback mode has two configurable settings: **default duration** and **rewind time**:

- default timeline duration is the interval size for the footage presented in the instant playback mode, default: five minutes (300 seconds)
- rewind is the amount of time for the playback to jump back before "now" (the moment when the instant playback mode was enabled), default: five seconds

Both values can be changed via Luxriot EVO Monitor [Application Settings](#).

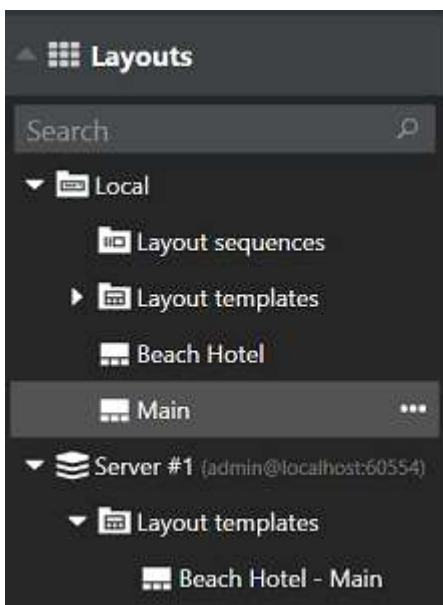
18 Layouts

Layout is a pre-configured viewport configuration with channels assigned for live view and archive playback. Layouts are created by filling a layout template with video channels. There are two main groups of layouts: local and shared.

Local layouts are created and stored locally on the same computer where the Luxriot EVO Monitor is installed; these are not available for other machines connected to the same server.

Shared, server-side layouts are kept on each server and are available for all users that are connected to the same server from other client computers. If the license limits the client connection number to 1, layouts can still be shared between non-concurrent client connections from different machines.

Layout template is a grid-like viewport pattern without any channels bound to it. There is a set of default layout templates stored locally with each Luxriot EVO Monitor installation; also, user-defined custom templates can be created via Luxriot EVO Console. Layout template with the channels assigned to viewports can be saved as a layout.

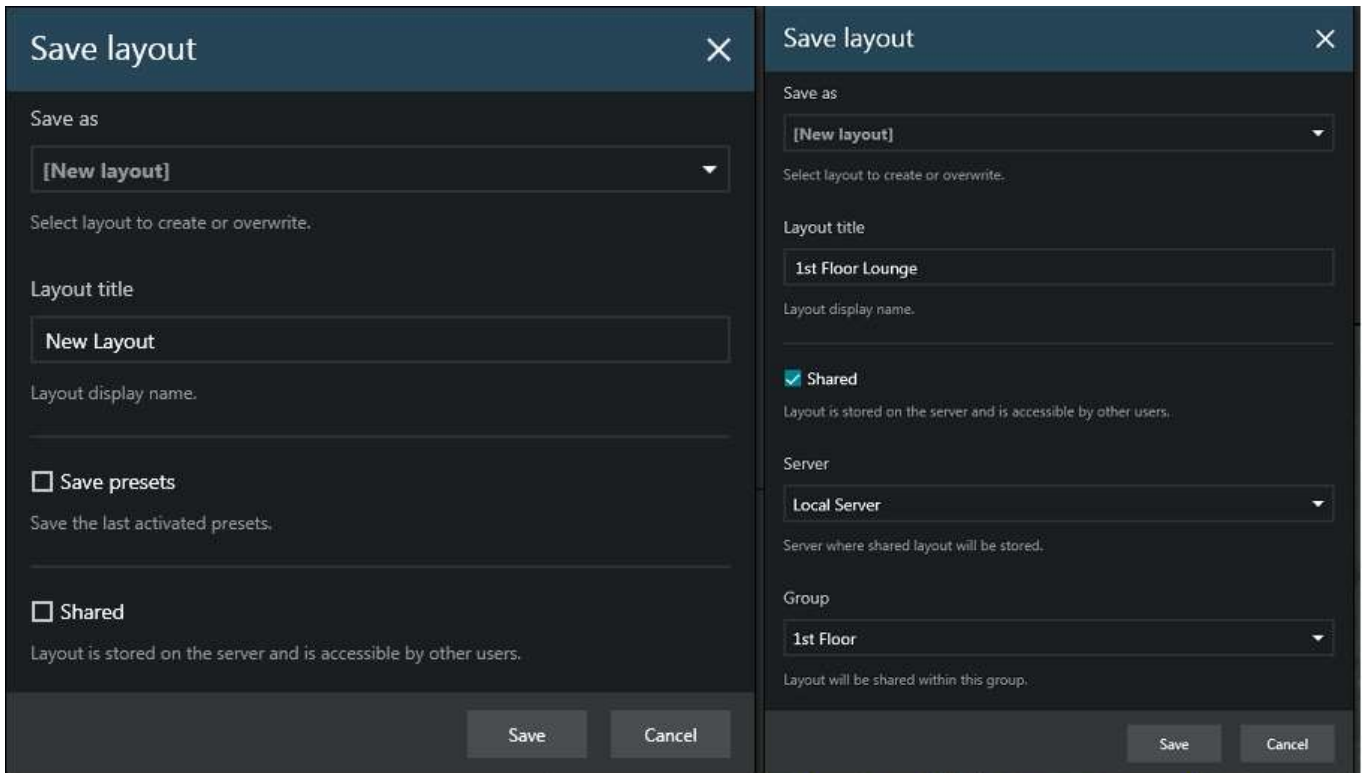


Layouts section

Drag and drop your desired layout template from the *Resources* menu on the left - either from the default local templates or from pre-configured layout templates available under connected server. Template will be empty; drag and drop channels from the relevant section of the menu on the left onto the layout viewports to fill the grid with cameras. Channels' contents will be loaded automatically if it is available.

Click the layout menu  button in the upper-right-hand corner - just above the layout - and select *Save Layout* to save channel configuration as a new local or shared layout, or to overwrite any of the existing ones.

Luxriot EVO Monitor User Guide




Save layout: regular or shared

There are the following additional options:

- Choose *Save Presets* if you wish to save the last activated preset for a PTZ capable camera together with the layout. If you do, the preset that was used for the PTZ camera will be remembered and loaded together with the layout, overriding any PTZ position changes, which have been made by any other user/action.
- To make the newly created layout available to any user connected to the same server, enable the *Shared* option in the layout properties and choose your desired settings: target server and layout group. Users who have the *View* permission for the target layout group will be able to see and use your layout; users with the *Administer* permission will be able to overwrite your layout using the same name.


Click the *Expand*  button next to the local layout name in the *Resources* list to remove the layout.

 You need at least one **layout group** to exist on the target server for you to be able to create shared layouts. Also, your currently logged user must have permissions to administer the target layout group.

In order to add layout groups, log into the target server via Luxriot EVO Console under an administrative account and go to *Layouts* section; details are available in your server administration user guide. Note that there are no built-in layout groups.


Together with the layout, the following parameters are **saved** and **loaded** for each viewport, both for local and shared layouts:

- channel/map position within the layout template
- digital PTZ position
- aspect ratio
- notification panel
- PTZ preset (if enabled when saving PTZ)

The layout menu also allows you to send the currently displayed layout to any of the pre-configured video wall components. Click the layout menu  button in the upper-right-hand corner and select *Display on* and then choose desired video wall and target display number.

Luxriot EVO Monitor User Guide



Click the *Expand*  button next to any layout in the list to bring up the layout menu. From here, you can:

- **delete** the target layout, or
- send the target layout to the [video wall](#) screen.

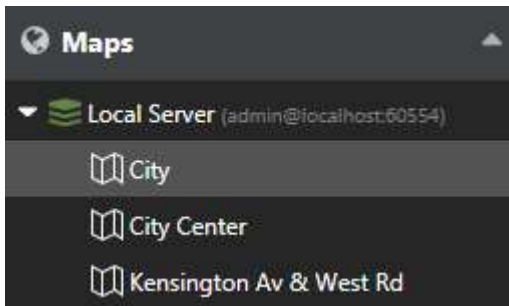
Note that created layouts cannot be edited: if you wish to change the layout contents, load current layout contents by dragging and dropping it on the live view, make desired alterations and then overwrite existing layout by saving the current layout under the same name.

Luxriot EVO Monitor User Guide

20 Maps

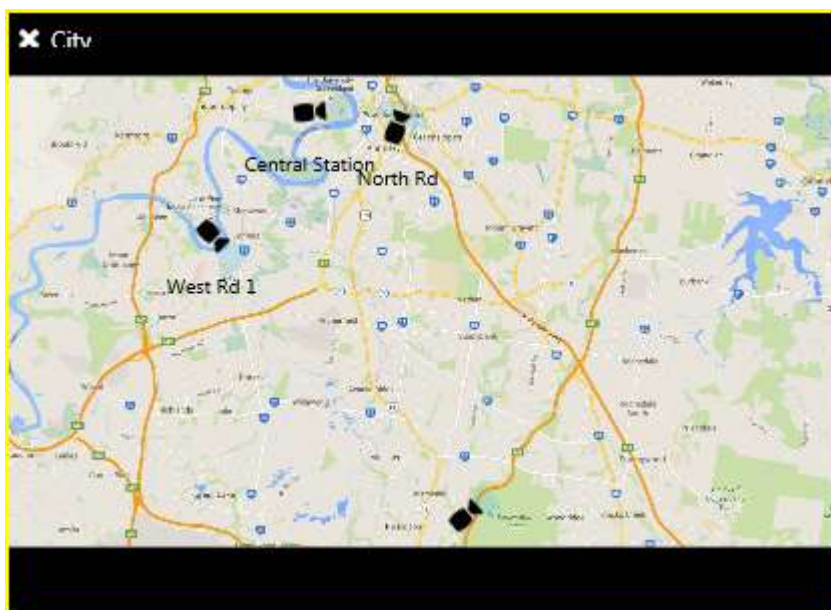
Maps and geo maps configured via Luxriot EVO Console can be viewed in Luxriot EVO Monitor: simply drag and drop them from the resources list on the left to any viewport or use drag and drop to load them in the main application window in live or playback mode. Maps fill the viewports just like channels but, unlike channels, they do not have any footage or overlay controls. One map can be opened in one viewport or in many simultaneously.

Note that this resource type is not available for the free server license.



Map list in the Luxriot EVO Monitor

Maps inside viewports can be digitally zoomed IN and OUT with the mouse wheel and moved around using the left mouse button (click and drag to move). Double-click inside any viewport with a map to switch to single camera view, then click again to return to the layout view. Zoom level is preserved when you save the layout with the target map.



Map loaded in Luxriot EVO Monitor viewport

All the cameras shown on a map can be loaded in Luxriot EVO Monitor with a simple double-click. In order to **pop up a channel** from the map:

- hover your mouse over the desired device on the map until it becomes highlighted with a pink circle
- double-click the target device in order to map it automatically on the first non-locked viewport within the current layout
- change the viewport, drag and drop your desired channel by its title onto to viewport of your choice
- if the device stream is already present on the layout, it will blink with a greenish yellow frame

User button markers placed on a map can be double-clicked to trigger the associated action. The marker will blink indicating that the action is being executed.

Luxriot EVO Monitor User Guide

23 Playback (Archive) Mode

Select *Playback* tab to switch to archive playback mode. Your current layout will be used and recorded video streams will be displayed for channels with enabled recording. If you wish to load footage from a different channel or channels, or use a different layout or layout template, use the *Resources* panel on the left:

- **Layouts:** double-click your desired layout to load it
- **Layout templates:** double-click your desired layout template to load it, then double-click or drag and drop the channels of your choice to fill the viewports
- **Channels:**
 - double-click a channel to load it automatically within the current layout (first, empty viewports are filled, then non-locked channels are replaced one by one)
 - drag and drop a channel onto any viewport to load it there

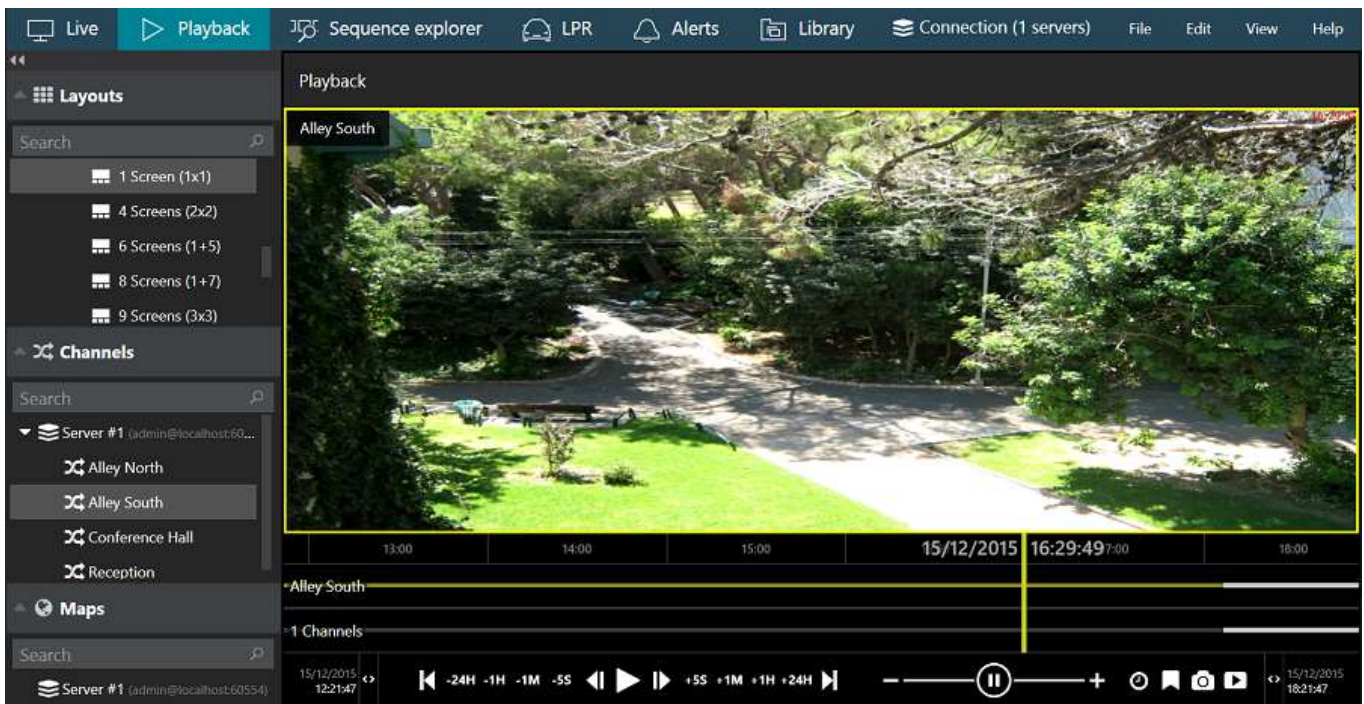
All channels will be listed under the servers from which they originate; or, if you have chosen to merge resources in the [connection properties](#), they will form an alphabetically sorted list. Each channel can be clicked and expanded in order to access recordings of its main an/or secondary stream, as well as separate tracks recorded on failover servers. When you double-click or drag and drop a channel by its title, all the tracks from its main stream will be displayed automatically (e.g., tracks originating from different recording servers will be combined to form the timeline).

💡 All the footage having **no associated active channels** will be available under *Orphan archive tracks*. Such recordings include footage from removed channels, renamed channels and also Luxriot VMS archive.

💡 Luxriot EVO archive is protected with **watermark**. If archive contents has been modified with third-party tools, a warning will be displayed during playback and a critical level entry will appear in the *Alerts* section.

Timeline and Playback Controls

Use the timeline and controls below to browse through recordings. For a multichannel layout, all channels will be played synchronously.



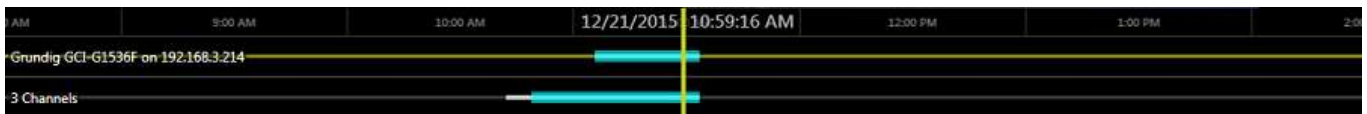
Archive Playback mode

The following viewport overlay controls are available in the playback mode:

- Upper left:
 - **X** - close the stream and free the viewport

Luxriot EVO Monitor User Guide

- viewport **lock status**: unlocked (default) or locked; unlocked means that the video in this viewport can be replaced by other camera if you double-click or drag it from the *Resources*
- camera name
- Bottom left: **stream details**
 - motion detector status: running = motion present, standing still = no motion detected
 - video codec of the stream
 - picture resolution, abbreviated
 - stream frame rate, FPS (only displayed up to 4x playback speed)
- Bottom right: **controls**
 - audio ON/OFF: disables or enables audio playback
 - [DPTZ](#) controls ON/OFF
 - aspect ratio (auto/stretch to fill viewport/original)
 - [motion grid](#) ON/OFF



Playback timeline

Right below the video stream, **timeline** is displayed:

- the yellow vertical line denotes **current playback position**
- time intervals show the timeline scale; click and drag left/right to move the timeline
- use your mouse wheel to **zoom** the timeline in and out (current playback position will be used as centre)
- the narrow white horizontal line shows recorded **video**
- the cyan line (a little bit wider than the white one) indicates **motion**
- the blue line (a little bit wider than the cyan one) shows recorded incoming **audio**
- the wide semi-transparent white line denotes **VCA metadata**
- **bookmarks** look like little red flags on the timeline

The video footage outline is shown twice: the upper timeline displays the contents of the currently selected stream, with the corresponding channel name shown on the left; the lower timeline shows a content summary for all the channels currently present in the viewport layout, both timelines being synchronised. The **second timeline** with summary can be optionally **disabled** via [Application Settings](#).



Playback controls


The **playback mode controls** are located at the bottom of the window:

- far right and far left of the timeline:
 - timeline start and stop timestamps
 - use the <> arrows and drag left to zoom out/drag right to zoom in the timeline
 - yellow arrow indicates the location of the nearest footage if it is not present on the timeline at the time (this can happen, e.g., after zooming the timeline)
- playback controls:
 - use the *Play/Pause* button to start playback
 - use the <> arrows near the *Play* button to go one frame back/forward
 - -/+ steps: click to go back/forward with a step of 10 seconds, 1 minute, 10 minutes, 1 hour or 1 day
 - |< >| arrows: go to the very beginning/very end of the footage
- playback speed:
 - during playback, drag the blob to adjust playback speed from +/-0.5x to +/-128x (you can use mouse wheel for this, too)
 - the *Pause* button duplicates the main pause control
 - when paused, set playback speed to start playing video (without pressing the *Play* button)
- additional controls on the left and on the right of playback controls:

Luxriot EVO Monitor User Guide

- go to the next/previous motion event
- I and II markers can be used for selection
- clock button: go to a specific date and/or time
- bookmark: add bookmark
- camera button: take a snapshot of the currently selected channel
- camera with a layout: take a multichannel snapshot
- video button: export a piece of video

Timeline selection can be created as follows:

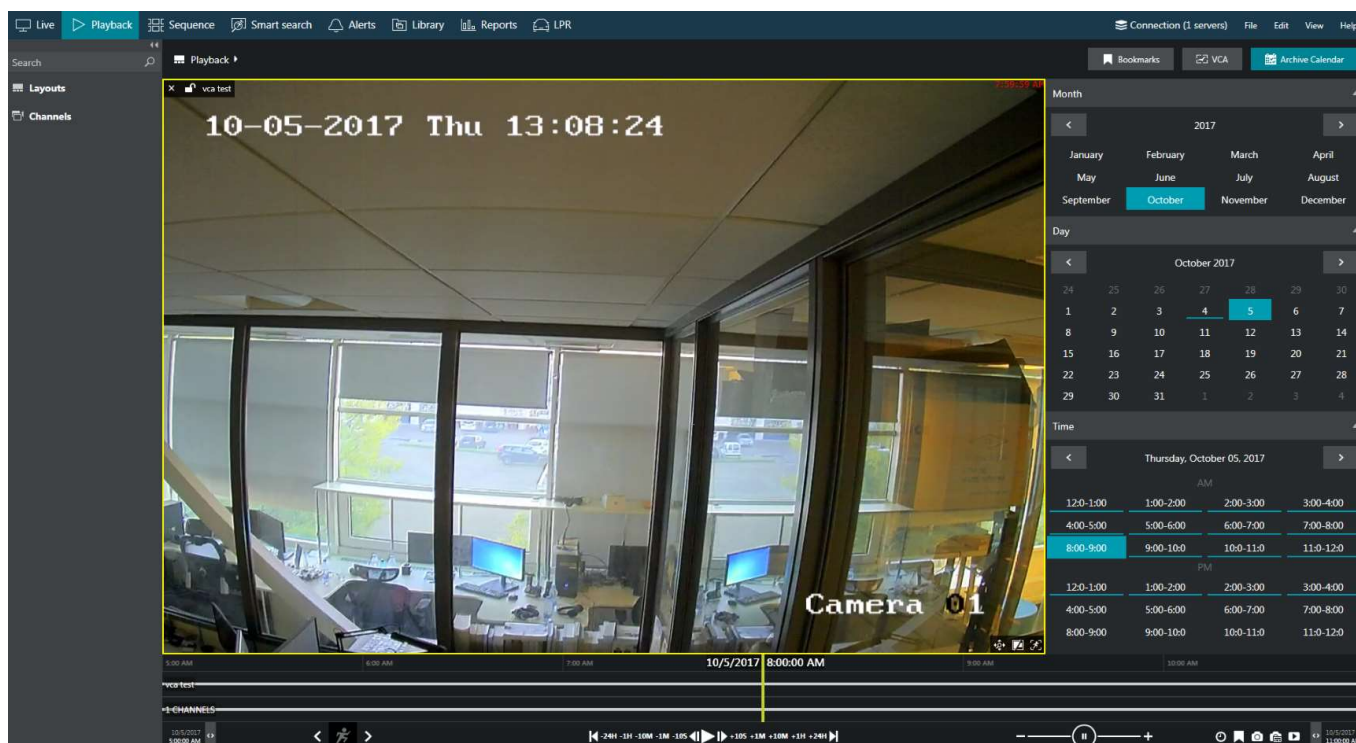
1. Click the timeline once to put the playback marker onto the desired starting position
2. Click the selection marker icon  below the timeline to mark the beginning: the corresponding mark will appear on the timeline
3. Place the playback marker to the end of the desired interval
4. Click the selection marker again to create the selection
5. Click the selection marker again to discard the selection

Once the target interval has been highlighted on the timeline, you can browse the timeline as usual; the selection will only be discarded if you click the selection marker icon once again or switch to other tabs (live etc.).

The created selection can be used for archive related actions where it is necessary to choose an interval (e.g., export video clip, delete or protect a part of the archive).

Calendar

Click the *Archive Calendar* button in the top right corner to toggle an additional panel containing archive calendar view. This control allows you to see for which dates and time intervals the footage is available, and to switch to some particular period quickly.



Playback mode with calendar enabled

Units of time (months, days and hour intervals) marked with a **blue underline** contain footage for at least one channel currently displayed.

Bookmarks and VCA Event Search

The **Bookmarks** button in the top right corner opens up an additional panel that allows you to browse the existing

Luxriot EVO Monitor User Guide

bookmarks. You will find more information on this in the [Bookmarks](#) section of this document.


Similarly, the **VCA** button next to the *Bookmarks* button in the top right corner provides video analytics event search functionality (recorded VCA events from server): please refer to the [VCA Events](#) section of this manual for further details.


Archive Protection and Deletion

It is possible to mark a certain part of the archive and use the selection for further deletion, or protect a part of the archive from being removed. Special user permissions are required to allow this functionality.




If you choose to **protect** a specific part of the archive, it will be **impossible to erase** it from the Luxriot EVO Monitor application, and that part of the archive will also be ignored by server when applying **quotas**. To disable protection, you need to log into the server via Luxriot EVO Console and change the archive protection settings.

If you choose to **remove** a part of the archive, it will be erased permanently with all related auxiliary information (audio, motion metadata etc.). Protected intervals cannot be removed; when such an action is attempted, you will get a warning in the [Alerts](#) section.

 When you delete a part of the archive, it is erased **immediately**. This action **cannot be undone**. Please mind applying all the necessary security precautions (e.g., take care of a good administrative account password and review user permissions) to avoid undesired data loss.

 When you **protect a short period** of the archive (e.g., several minutes), in fact, the **whole file** containing this period is protected from erasing. Therefore, intervals adjacent to protected period will also be locked. You can verify the exact protected interval by opening Luxriot EVO Console >> *Monitoring* section >> *Archive statistics* >> *Protected intervals*.

General steps for both these actions are:


1. **Mark** the beginning and the end of the target interval on the timeline using the markers  below the timeline
2. Use the **buttons** in the bottom right corner to either **remove**  a part of the archive or **protect**  it from deletion

You can skip the first step and press the delete/protect buttons without any selection on the timeline; then, the last five minutes of the recordings will be used as the target interval.



Selection on the timeline

All footage that has been protected from erasing can be un-protected via Luxriot EVO Console, by logging with an administrative user account with corresponding privileges. Until then, the protected part of the archive cannot be erased by user actions (as described above) or by automatic erasing based on quotas.

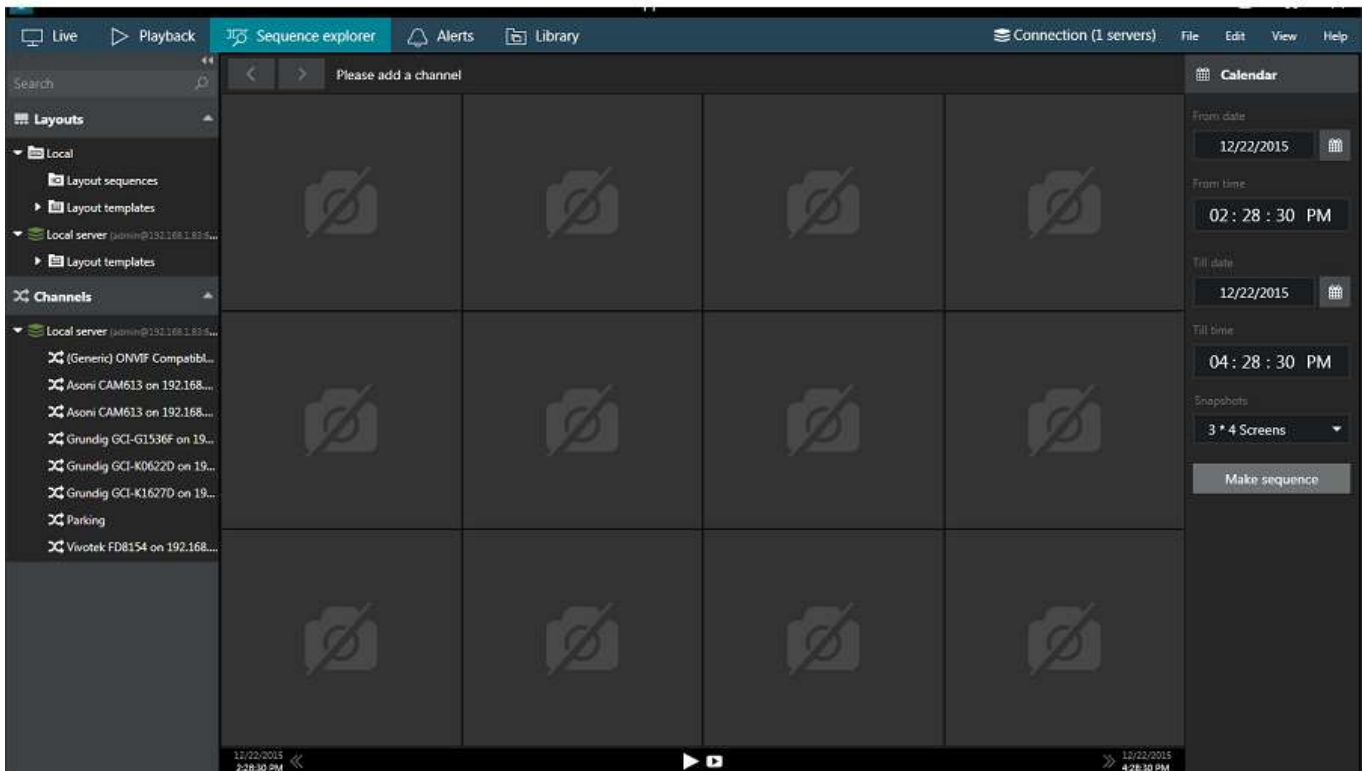
 Protected archive is excluded from recording quotas and will not be overwritten. Also, such footage is protected from manual deletion. Therefore, when protecting a large part of the footage, make sure that the target storage has sufficient free space, and set lower storage quotas, if necessary.

Luxriot EVO Monitor User Guide

24 Sequence

The sequence explorer is an archive playback extension with additional tools for footage analysis. The whole recorded stream can be split into smaller pieces down to 2 minutes in length; each of these can be played separately or exported with a single click.

In the Luxriot EVO Monitor upper panel, click the *Sequence* tab: the current main window will then display the sequence explorer with empty viewports.



Sequence explorer interface

Interface Overview

Interface elements have the following designations:

- **Calendar:** specify the time period to be analysed by entering date/time boundaries, and also set the viewport layout
 - date can be entered manually or selected from calendar view
 - time can be entered manually or adjusted by mouse wheel (select the value to be changed and use mouse wheel to increase/decrease it, while keeping the mouse cursor over the field)
 - minimum time period is 120 seconds
 - available viewport layouts are: 3x4 (default), 3x5, 4x3, 4x6, 6x4, 5x5 screens
- **Top panel:** <> arrows enable users to browse viewing history within the channel in use; the name of the channel being used is displayed
- **Main window:** displays video clip sequence with corresponding controls; empty viewports mean that no footage is available for the time period selected
- **Bottom panel:** contains global sequence controls for the whole currently displayed period (and **not** the selected sequence elements)
 - the << and >> arrows on the sides enable users to load the previous/next portion of the footage sequence, with time period equal to the one set in the *Calendar*
 - next to the arrows, the date/time boundaries of the current video portion are shown
 - *Play* button in the centre of the panel will open current video portion in the *Playback* mode

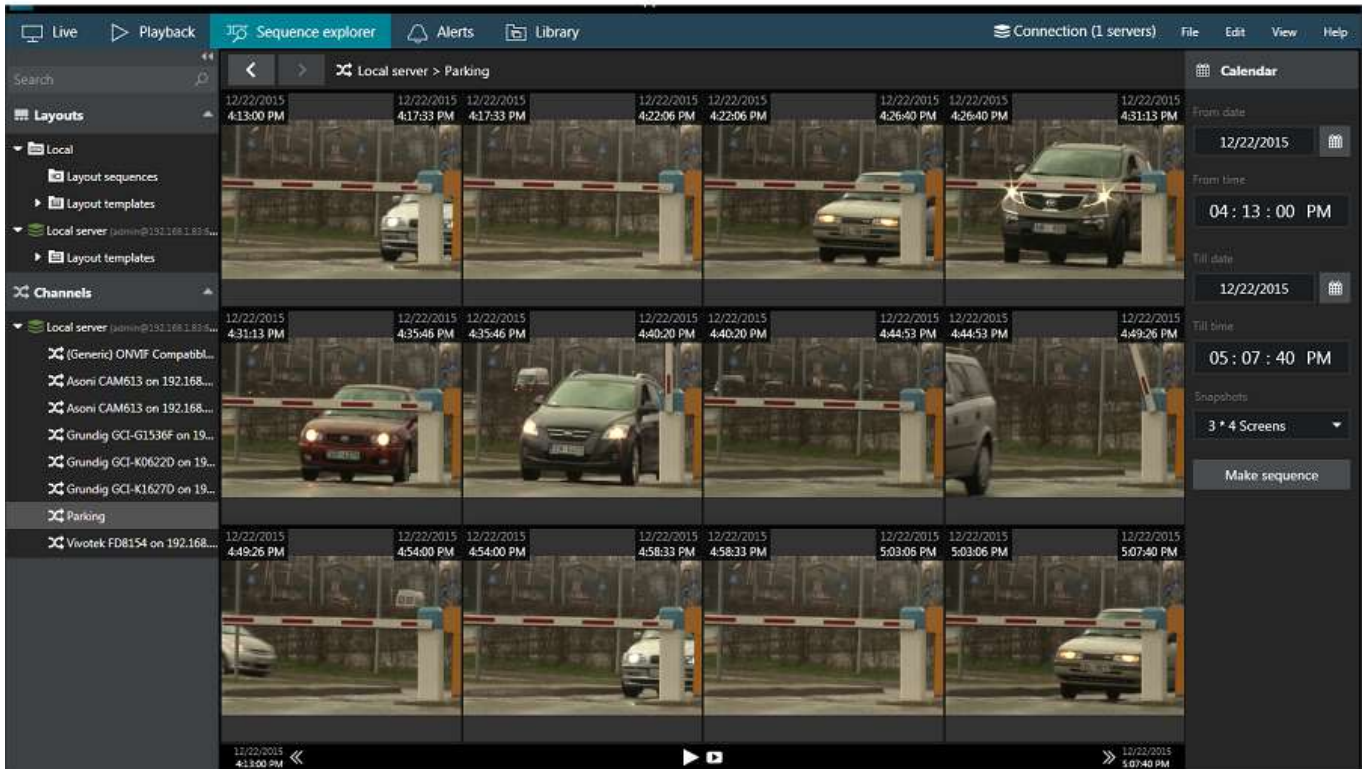
Luxriot EVO Monitor User Guide

- *Video* button in the centre of the panel brings up the *Video export* dialog box

Make Sequence

Drag and drop the desired channel from resources onto the main window; the camera name will appear at the top. Note that the sequencing works with one channel at a time, so if you drag and drop another channel onto the explorer window, all previous changes will be discarded.

Select sequence timing in the calendar panel on the right and then click the *Make sequence* button. Video footage from selected time range will be divided between all viewports, so that all of them will contain video clips of equal duration. For instance, if the selected time range is 2 hours and a 3x4 layout is set, each viewport will contain a 10-minute video clip: $(2*60)/3*4 = 120/12 = 10$ minutes.



Built sequence

From this point onwards, you have several options for creating a new sequence:

- enter a new time period on the *Calendar* panel and click the *Make sequence* button
- select one or multiple sequence elements and click the *Make sequence* overlay control (see the control descriptions below)
- double-click a single sequence element to split it into a new sequence

If you choose to build a new sequence out of one or multiple sequence elements, their date/time boundaries will be set as new boundaries, and the video clip in the resulting sequence will be of shorter duration. In this way, any footage can be split into smaller and smaller chunks down to two minutes, facilitating footage analysis process and making it easy to find the scene of interest within a larger fragment of footage.

Use the << and >> arrows on the bottom panel to go back and forth along channel timeline. The size of the jumps back and forth will be equal to the base time period set in the *Calendar*.

Sequence Controls

Viewport overlay controls are available for each sequence element. Click any piece once to select it; click one screen once and then click another screen to select a series of fragments. Selection border style will help you control your actions: a **dashed** line denotes a single click, **solid** line appears after the second click. As a result, you will always know, which selection stage you are on when selecting multiple screens.

Luxriot EVO Monitor User Guide



Select one sequence fragment with a single mouse click

Once you have selected one or a set of fragments, overlay controls in the bottom right corner of the selection offer the following possible actions:

- **Magnifier** button: make a new sequence out of selected fragments; use the *History* controls <> in the upper panel to go back
- **Play** button: play selected footage in [archive playback](#) mode
- **Video** button: export video from selected time range (no additional *Set time range* window is displayed)



Multiple regions are selected with two clicks

Timestamps in the top-left and in the top-right-hand corners of each viewport represent time range of the contained footage fragment. In case multiple screens are selected, the intermediate timestamps are skipped and time frames for the multi-fragment footage portion are displayed.

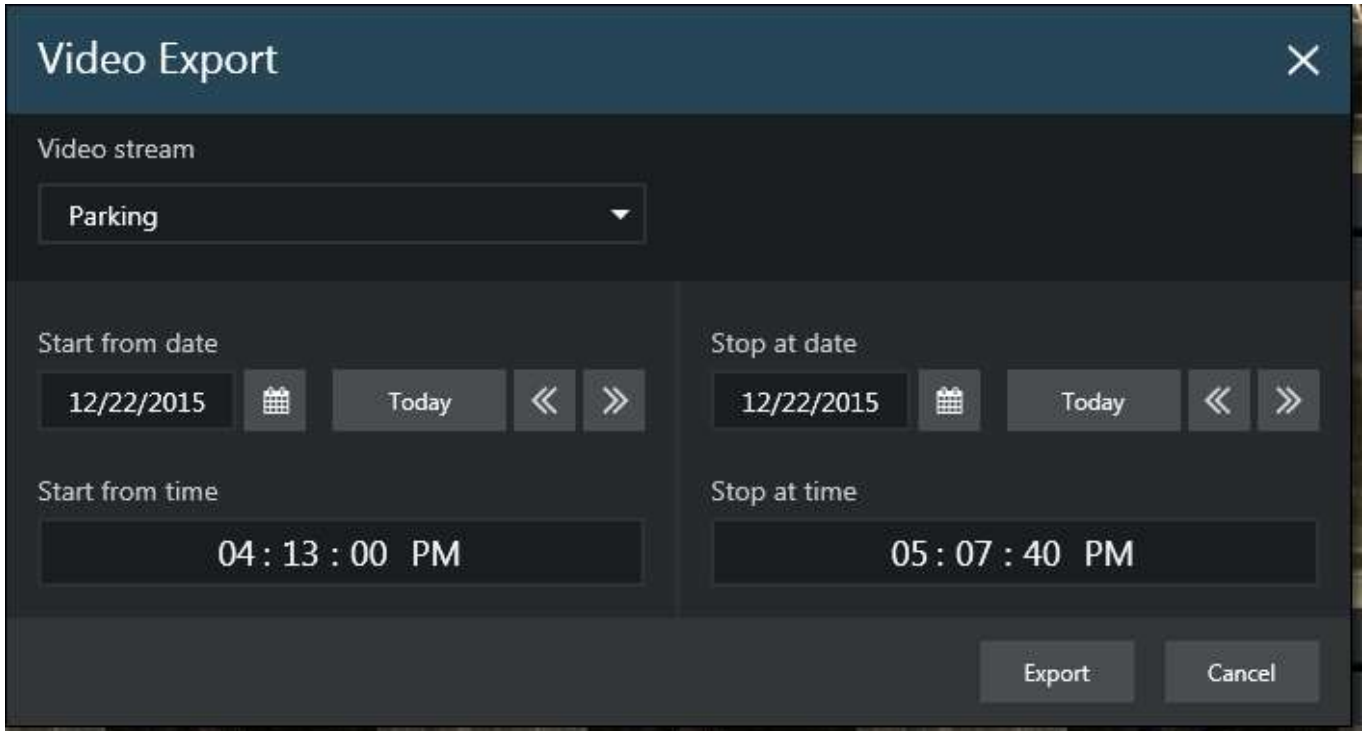
Playback

Click the *Play* button on the bottom panel to open the whole inspected footage portion in the archive playback mode. The equivalent button on each of the selected sequence fragments will open just that specific fragment for playback. Playback operation is exactly the same as for usual archive viewing and it is explained at length in the *Archive Playback* topic.

Video Export

Click the *Video* button in the bottom panel to bring up the *Video Export* dialog box and set your desired time range for exported footage; channel selection is limited to the one channel open at the time in the sequence explorer.

Luxriot EVO Monitor User Guide



Adjust the date/time boundaries during which you want the footage to be exported

The *Video* button overlay control in the fragmented sequence screens will automatically export video from selected time range without additional prompts. In either case, the exported video will appear in the [Library](#).



Library notification

Sequence explorer works with the streams based on the time intervals. If you want a more intelligent archive analysis tool, go to [Smart Search](#) to base your search on motion in certain regions.

Luxriot EVO Monitor User Guide

25 Smart Search

Along with regular [archive playback](#) and [sequence exploring](#), Luxriot EVO Monitor application provides the **smart search** feature, which allows you to specify a region of interest and let software search for motion events in the defined area based on the existing motion detection (MD) metadata. This advanced search option is available for all Luxriot EVO servers and editions.

There are two types of motion analysis operation: **grid** and **area** (frame). Grid type detection is implemented for software-side motion analysis (both High Performance and High Accuracy modes), while most devices send their motion detection metadata in the form of areas (frames), this is, the software only knows if the motion was present in the configured zone, and exact location of the motion in that frame is not available.

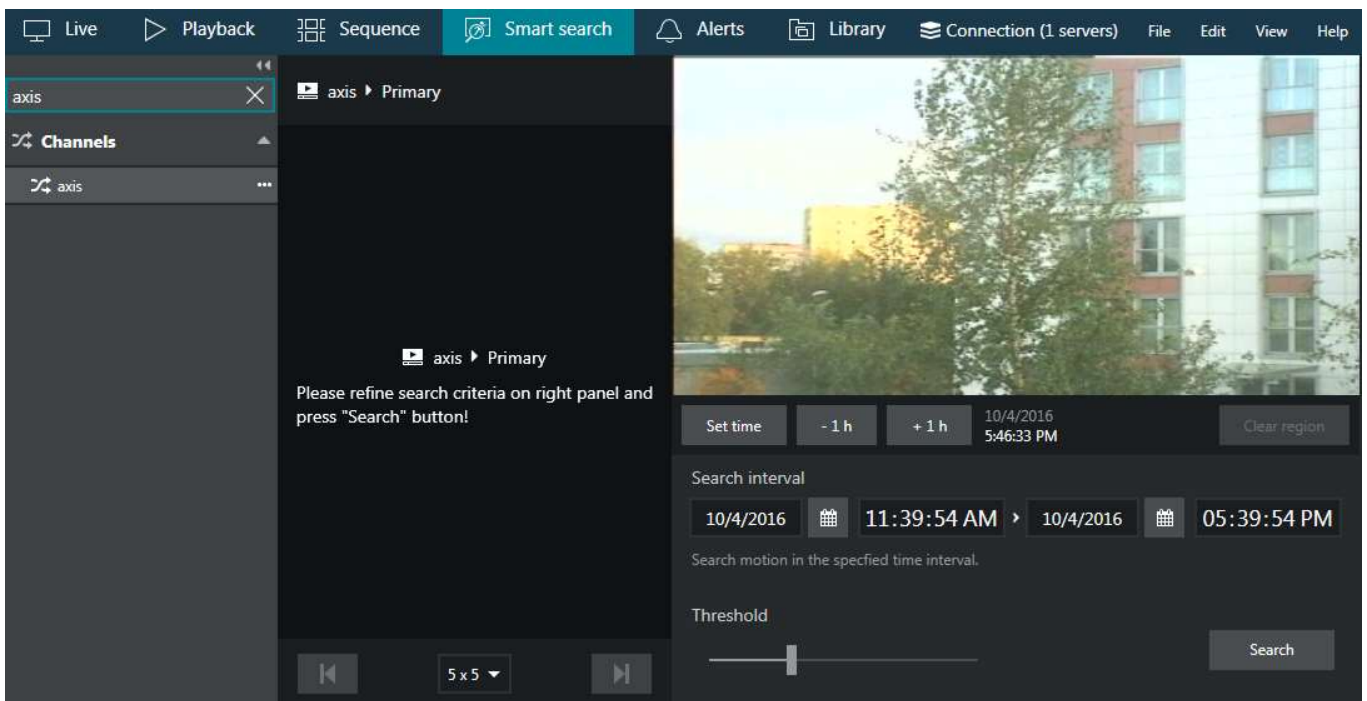
Understandably, precise results of smart search can be only obtained for grid-like detectors. Searching through an area-type stream by motion region will give you motion events whenever motion has been detected in the configured detection areas. In order to get better search results with device-side detectors, please adjust the motion detection zone via device Web interface.

In order to start using smart search, click the corresponding tab on the upper panel of the main Luxriot EVO Monitor window.



Smart Search option

When you open Smart Search for the first time since Luxriot EVO Monitor application startup, the main viewing area will be empty. The resources menu on the left will contain all recorded streams, just like in regular playback: simply drag and drop your desired video stream onto the viewing area in order to start working with it. The panel on top of the viewing area will have your selected channel and stream name displayed then. The loaded stream will still be there if you switch to some other tab and then go back to Smart Search.



Smart search with a loaded stream

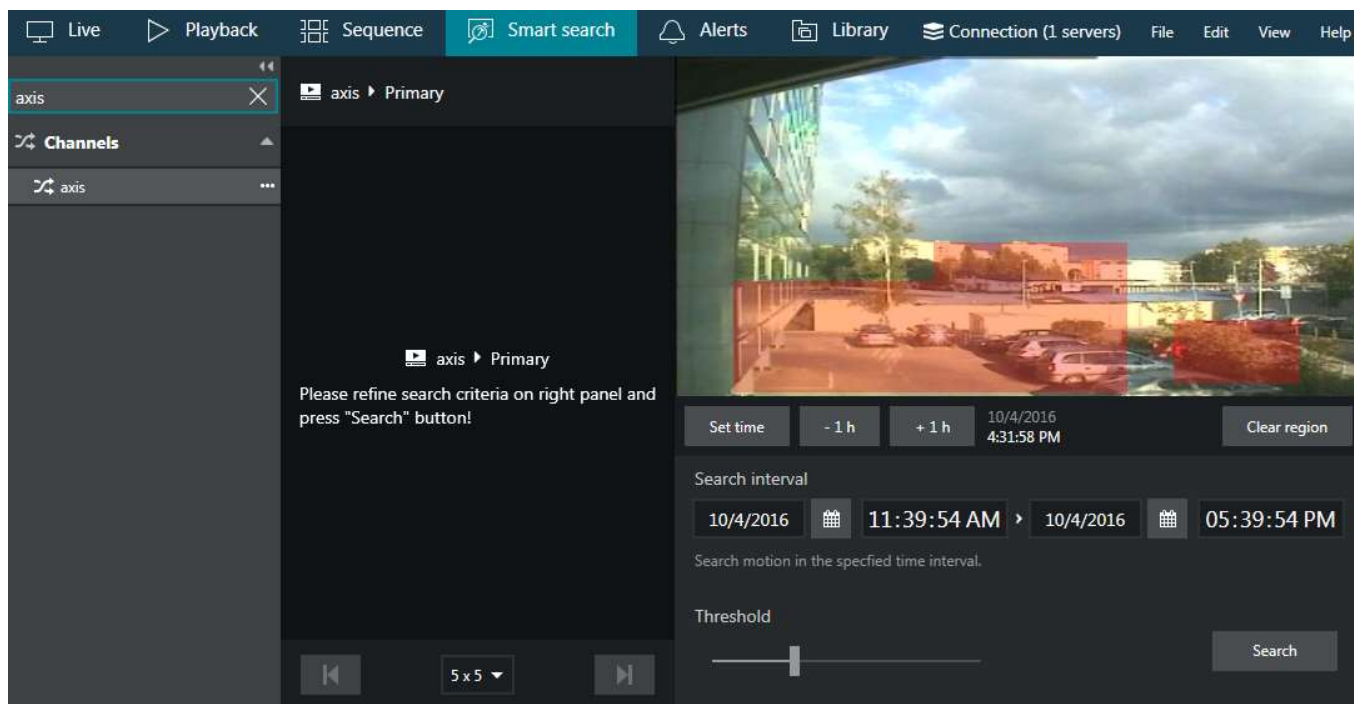
Search Parameters

The search procedure consists of **three main steps**: define the region of interest, set the time period and sensitivity, and analyse the results.

Luxriot EVO Monitor User Guide

Once you have selected the stream for analysis, the stream preview will appear in the upper right corner as a static picture. You can use the buttons below the picture to choose the point in time for the preview: this comes handy in case the stream comes from a PTZ capable device, or if the underlying device has been moved/replaced. Choosing a correct scene is crucial for obtaining the correct search results.

Click and drag on the picture to draw a rectangular **region of interest**. You can mark multiple regions and also combine them to make them overlap, creating a more complex shape. Press the *Clear region* button to discard all areas and start drawing again. If no region is specified, all available motion information will be searched.



Define region of interest

Afterwards, **set the search interval** using the controls below the picture. You can enter the date manually or use the calendars to choose a specific day. To manipulate time, click the desired time units and then either enter the numbers from your keyboard, or use your mouse wheel, while still hovering the mouse cursor over the timestamp.

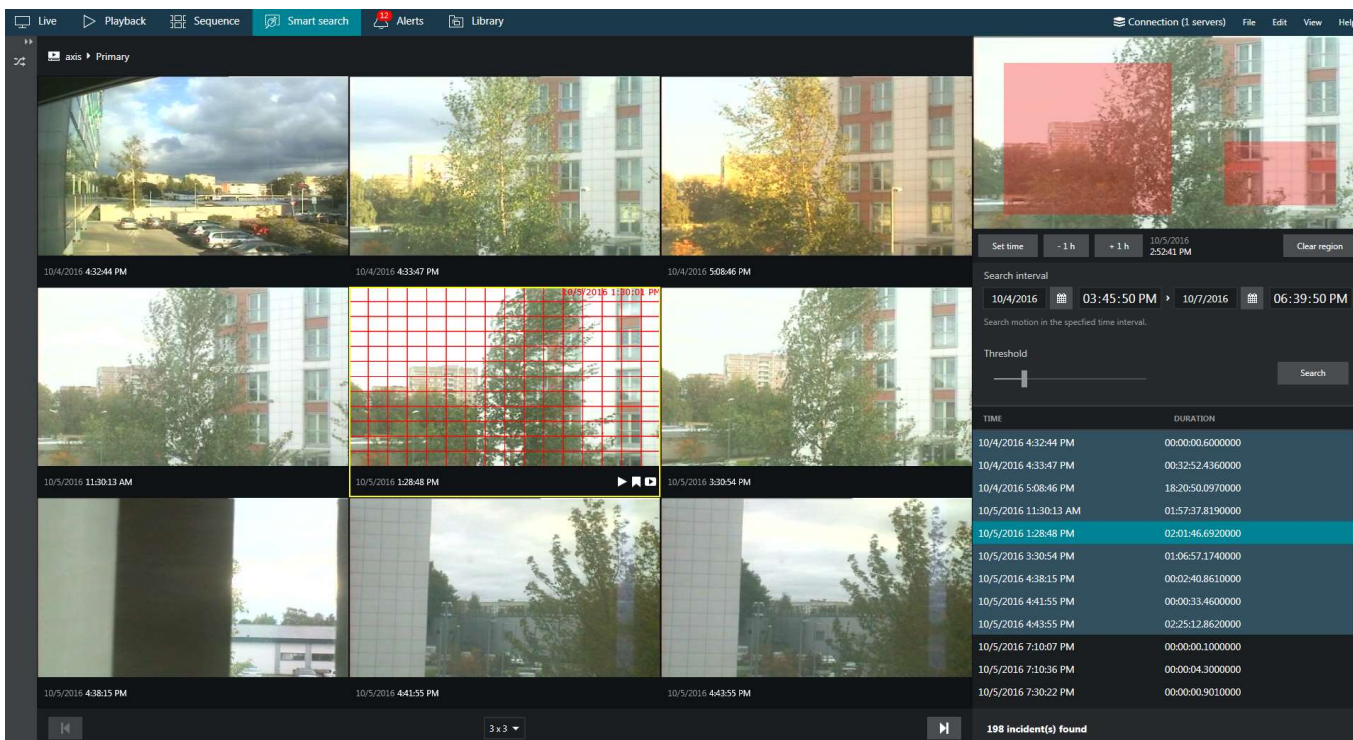
Next, set the desired **threshold** for the motion absence by dragging the slider. Threshold range is 5..60 seconds and it defines how much time should be there between two subsequent motion events for them to be reported as a single event. For example, if you set the threshold to 5s (minimum), all consecutive motion events with gaps between them smaller than 5s will be reported as a single search result, and events having more than 5s between them will be presented as separate results.

When ready, press the *Search* button to filter the motion events according to your settings. Smart **search results** will appear in the central viewing area; if the specified time interval is large, the results may appear not at once but rather one by one, as the search progresses.

Investigation

Each of the search results will be presented as a preview picture with a timestamp below, the timestamp designating the beginning of the sought-for motion event. At the same time, all results will be listed on the right-hand side, with the currently displayed results being highlighted. The list also shows the motion event duration for each of the results. In the very bottom of the list, the total number of results will be displayed.

Luxriot EVO Monitor User Guide



Smart Search in action for a PTZ camera with area type MD

You can change the presentation grid by choosing the desired **layout** in the drop-down list below the central area: available layouts range from 3x3 to 6x6 viewports. If there are more results than a single layout can contain, left and right - |< and >| - arrows will become highlighted, allowing you to **browse** back and forward. Notice how the highlighted item set changes as you browse. You can scroll the list and choose any result from the non-highlighted items; the corresponding portion of results will be then loaded in the viewing area.

Click the event of interest - either a row in the right-hand list or a picture in the central viewing area - to start working with it: the selected video clip will be looped and played back continuously.



Smart Search result with grid type MD

The overlay control buttons in the bottom-right-hand of each viewport allow you to perform the following actions (from left to right):

- **Play** button: go the regular *Playback* mode to view the search result in a single channel mode
- **Bookmark** button: click to add a [bookmark](#) at the beginning of the selected video clip
- **Video export** button: selected video clip will be automatically exported

Luxriot EVO Monitor User Guide


For just any video clip in the results you can go to the regular playback mode with a single click of the *Play* button overlaying the clip; to go back, simply click the *Smart Search* tab to get back right where you left off.

When you export a video clip from the search results, it is exported automatically with your pre-defined video export settings, without the need to confirm the time range. You will still be asked for the file name if you have not [chosen to use pre-defined settings](#). In order to export longer video clips, either go to the regular *Playback* mode by choosing the corresponding tab in the top panel, or select a higher *Motion absent duration* threshold in the smart search parameters.

Luxriot EVO Monitor User Guide

26 Bookmarks

Luxriot EVO Monitor offers an opportunity to mark any specific moment in time so that it can be easily found in the *Playback* mode later. It is possible to add bookmarks from [live](#), [instant playback](#), regular [playback](#) and [smart search](#) modes; bookmarks are displayed and can be searched through in the regular playback mode.

 The bookmark overlay control may be absent in the following cases:

- your currently logged user does not have permissions to add bookmarks - in this case, the bookmark control may be absent for specific channels only
- the control had been hidden via [application settings](#) (by default, it is enabled)

Also, the bookmark button will be greyed out for orphaned archive tracks in the *Playback* mode (orphaned tracks are recordings that have no active channel associated with them).

Add Bookmarks

Select your desired channel by clicking it in live, playback, instant playback or smart search mode.



Among the **overlay controls** in the bottom-right-hand corner of the channel, locate the bookmark icon  and click it once. In playback mode, the *New bookmark* button is situated in the bottom-right-corner of the whole viewing area, near snapshot and video export controls.

Luxriot EVO Monitor User Guide



Bookmark in playback mode can be found in the bottom-right-hand corner

Bookmark dialog box will appear, offering you to fill in the details. Several details are available in the dialog box:

- *Channel*: displays the currently selected channel name, cannot be changed
- *Time*: bookmark time - inserted automatically but can be adjusted (see details below)
- *Title*: bookmark name, e.g., *Motion* or *Person detected* (empty by default), which can be later searched by
- *Description*: user comments - a detailed description of what has happened (empty by default)

Bookmark **time** is automatically inserted using the following logic:

- *Live mode*: the moment of time when you pressed the bookmark button
- *Instant playback*: the currently played moment, the play marker position
- *Playback*: the currently played moment, the play marker position
- *Smart search*: the incident timestamp

and the timestamp in the bookmark details can be changed at this step by using the calendar or manual insertion (keyboard) for date and click+mouse wheel or keyboard for time.

While you are adding a bookmark, playback (regular or instant) will proceed in the background without being paused.

Luxriot EVO Monitor User Guide

Add bookmark [X]

Channel

axis

Bookmark channel.

Time

8/24/2027 [Calendar Icon] 09:43:31 AM

Bookmark time.

Title

Car arrived

Bookmark title.

Description

Boss is in da house


Bookmark description.

Save Cancel

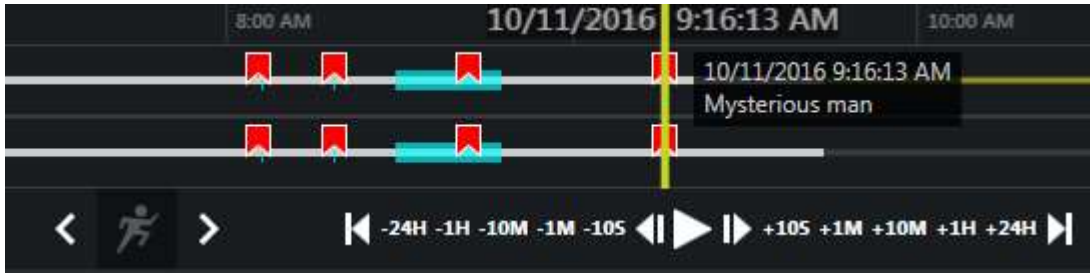
Add new bookmark dialog box

After you have filled in all the desired fields, click *Save* to add the bookmark at the selected moment in time. Your newly created bookmark will be available in the bookmark search in *Playback* mode from now on. Also, all bookmarks are visible on the timeline: these look as tiny **red flags**. You can hover your mouse cursor over any of the bookmarks to get a tooltip with the bookmark timestamp and title. In order to see the description, double-click any bookmark on the timeline.

Search Bookmarks

All the added bookmarks will be visible in **regular playback** and also in the **instant playback** modes, each bookmark being denoted as a  red flag. Hold your mouse cursor over the bookmark to see its name and exact time; double-click a bookmark to open a detailed description in a separate dialog box.

Luxriot EVO Monitor User Guide



Bookmarks on the timeline in *Playback* mode

In order to search for and view the existing bookmarks added both by you and other users, go to the **playback** mode by switching to the *Playback* tab on the upper panel of Luxriot EVO Monitor. Choose a layout of your preference either by loading an existing one or by filling the viewports with channels of your choice.

In the upper-right-hand corner, press the *Bookmark search* button in order to open the bookmark search panel.

Here, you have two options: search by bookmark creation time (i.e., when the bookmark was added, regardless of its location on the timeline) and/or by actual bookmark timestamp (its position within the timeline). Define the search parameters in the following manner:

- choose whether you want to search by bookmark time, its creation time, or both at the same time
- set desired date and time range for bookmark time, its creation time, or both
- select a channel from the drop-down list (one of those present in the layout)
- if you wish to search for bookmarks for all channels present in the layout, choose the "All visible in layout" option
- optionally, enter a bookmark title or a part of it (without wildcards) to refine your search results

When you have entered all the search conditions, press the *Search* button to obtain the bookmark list.

Luxriot EVO Monitor User Guide

Bookmark search

Search by bookmark time

10/6/2016 12:32:30 PM > 10/7/2016 12:32:30 PM

Search bookmarks in the specified time range.

Search by creation time

10/6/2016 12:32:30 PM > 10/7/2016 12:32:30 PM

Search bookmarks created in the specified time range.

Channel: All visible in layout (2 channels) ▼

Title: room

Bookmark channel. Bookmark title.

Search

BOOKMARK TIME	TITLE	CHANNEL
10/7/2016 12:31:06 PM	Motion in the room	axis
10/7/2016 12:31:02 PM	Motion in the room	axis
10/7/2016 12:10:02 PM	Motion in the room	axis

Bookmark search results

Search results will appear in the list in the bottom of the search panel. **Single-clicking** a bookmark will auto-locate it on the timeline, allowing you to see the exact moment, to which the target bookmark has been bound: click the *Play* button on the archive playback panel to start playback.

You can also **double-click** any bookmark either in the list or on the timeline to open it and view its contents in a separate dialog box. Understandably, you will not be able to change any bookmark details.


Found data can be saved into a **CSV** file (comma-separated values) that can be later parsed or opened with MS Excel-like applications. To do this, simply click the *Export CSV...* button below the search result list and specify your desired file name and path.


Luxriot EVO Monitor User Guide

30 Video & Snapshot Export

Video clips, frame sequences, multichannel layouts and individual pictures can be exported in order to be viewed later, without Luxriot software.

Snapshot Export

A snapshot of an individual channel can be taken at any time from live view, sequence explorer, instant playback and regular playback modes. To save a snapshot, click the *Snapshot*  button in the overlay controls or bottom panel controls.

In playback mode, it is possible to export a snapshot that will consist of all channels present in the current layout. To do this, use the *Multichannel Snapshot*  button in the right side of the bottom panel.

The frames will be saved with your pre-defined frame export settings, if this option is enabled in the [Application settings](#); otherwise, you will be prompted to specify the file name and quality preference. After you have clicked the snapshot or multichannel snapshot button, the frame will be automatically saved in JPG format and will appear in the [Library](#) section of Luxriot EVO Monitor.

Video Export

Video export settings can be pre-defined in the Luxriot EVO Monitor [Application settings](#). These include: file name, output format, compression and resolution preferences, as well as subtitle settings. Some of the settings, when selected, allow additional features like motion blur.




If you wish to embed the **external textual data** with the video or use **motion blur**, use **MKV** export format with **VP8** compression. MKV format also exclusively allows to export video in **time lapse** mode.



Time presentation settings do not affect video clip export. When you export a video clip from a remote server, which is in a different time zone, and add timestamps in subtitles, your **local time** will be used.

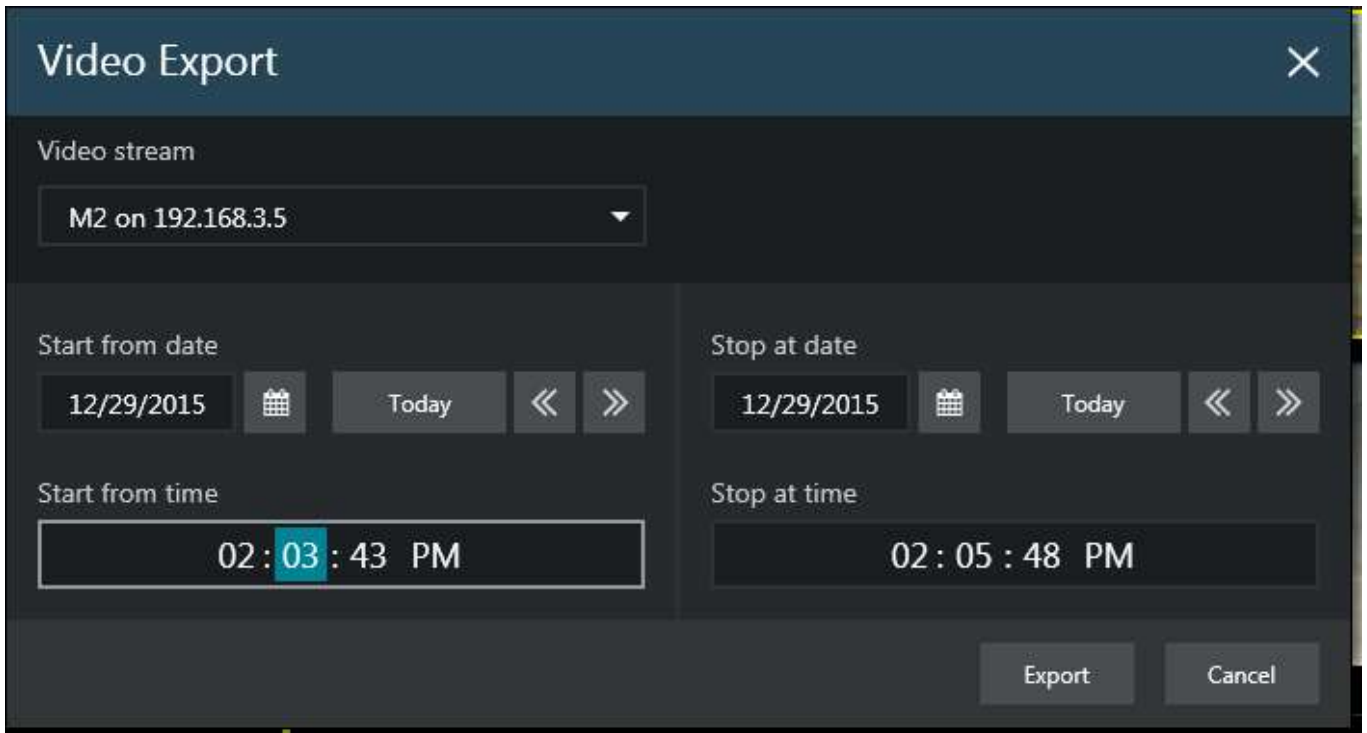
You can choose to use the pre-defined settings always; otherwise, you will need to confirm or adjust the export settings every time you export a video clip from anywhere. All the exported fragments will be displayed in the [Library](#) immediately.

Video can be exported automatically (without additional time range prompt) by clicking the *Video Export*  button in the [viewport overlay](#) controls:

- from [Sequence Explorer](#), by selecting a range of at least two video fragments: selected clips will be exported
- from the [Instant Playback](#) mode: the most recent currently loaded footage will be exported at once (last 5 minutes, by default).
- from the [Smart Search](#) mode, by selecting the desired search result: selected fragment will be exported

A video export dialog box with additional settings can be launched in the following ways:

- from *Playback* mode, by clicking the *Video Export* button in the bottom right panel (the channel choice is limited to those that are currently displayed plus **multichannel** export)
- from *Sequence* mode, by clicking the *Video Export* button in the centre on the bottom panel (channel choice is limited to channels currently being viewed)



Video export dialog box

When exporting from *Playback* with advanced options, you will have an opportunity to choose the stream to be exported (from the channels currently present in the layout) or, alternatively, choose to export the clip with all the displayed streams (multichannel export); also, you can combine any video stream with any audio stream (also coming from one of the displayed channels).

In *Sequence* mode, stream selection is reduced to the sequenced one and you can choose whether or not you wish to export the associated audio stream, too. In both modes, you can specify the date and time range for the exported video clip.



All exported video data is split automatically into files of ~1.8GB size to guarantee that the files are played correctly. The file size and time required for export depends on the selected file output format, compression, resolution and subtitle presence.

Select your desired date and time boundaries for the export of the footage: dates can be picked from the drop-down calendars, times can be adjusted by clicking hours/minutes/seconds and then scrolling up/down with mouse wheel. When you are ready, click the *Export* button; the video file will be saved with your pre-defined video export settings, if enabled; otherwise, you will be prompted to specify the stream properties and export directory.

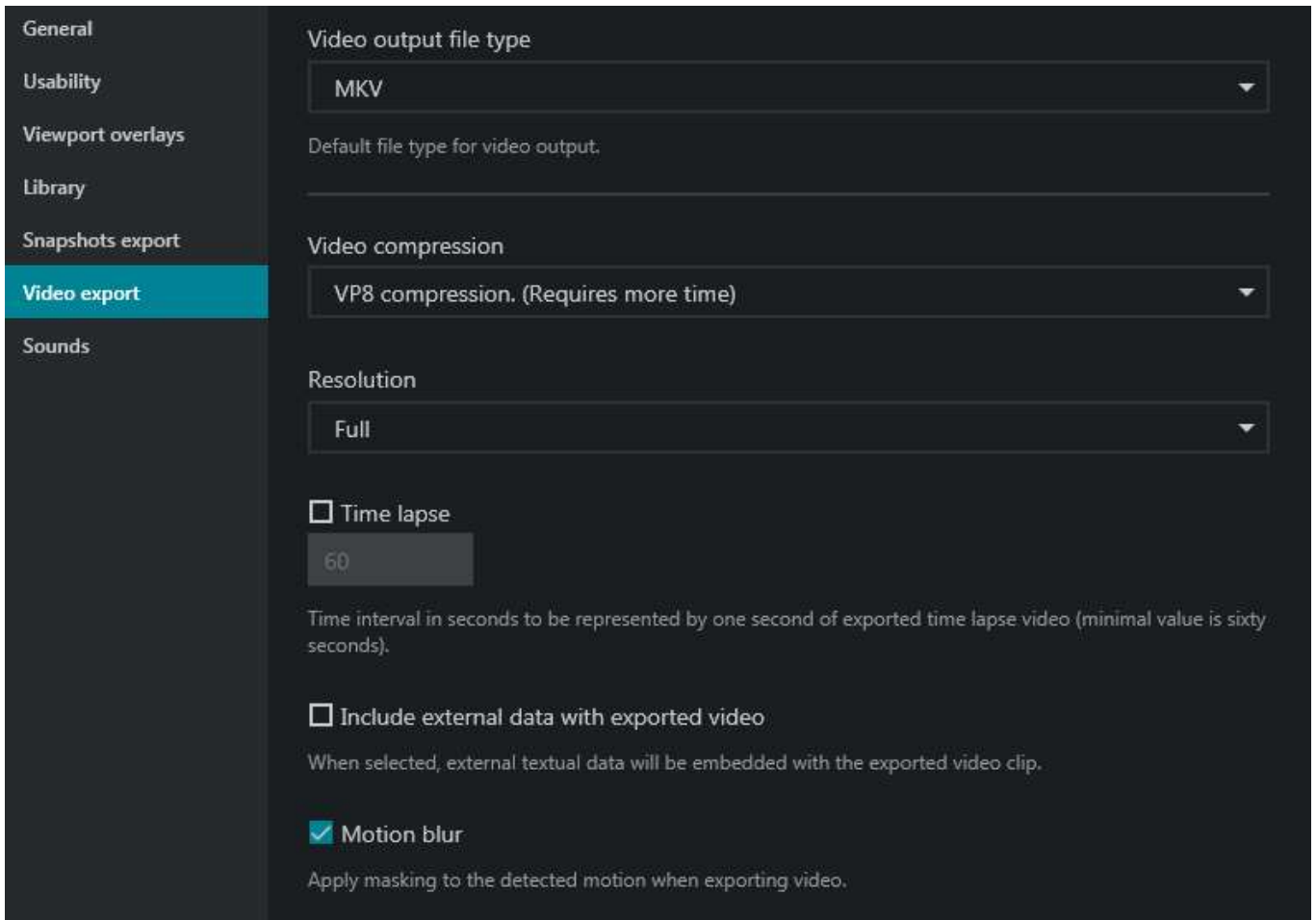
Motion Blur

Exporting video clips with MKV+VP8 settings gives you an extra option to apply **privacy masking** to the video. The video is retrospectively scanned for motion (software-side MD is applied) and the selected regions are blurred, thus hiding whatever is behind the motion. First, enable the feature in the video export settings, and then an additional dialog box will pop up every time you export a video clip.

To enable privacy masking, choose the following [settings for video export](#):

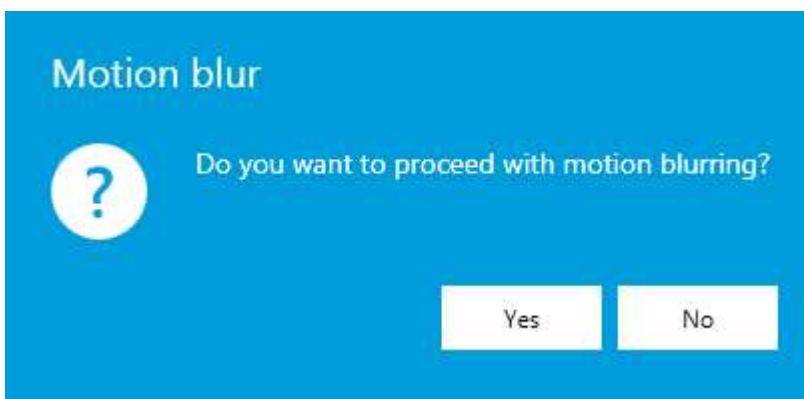
- **Video output file type:** MKV
- **Video compression:** VP8
- **Motion blur:** enabled (checkbox)

Luxriot EVO Monitor User Guide



Video export settings for enabling motion blur

Next time you export a **video clip**, you will be asked if you wish to proceed with motion blur. Click *Yes* to open the dialog box and adjust **blur settings**, or click *No* to export this video clip without any masking.



On the right side, choose the settings you find appropriate:

- **Grid size:** motion grid dimensions for both region selection and motion processing, can be 16x16, 32x32, or 64x64 (larger grid size corresponds to smaller grid elements)
- **Intensity:** blur level, ranging from very low (minimum blurring) to very high (heavy blurring)
- **Motion sensitivity:** detector intolerance to changes, ranging from very low (small fluctuations will be ignored) to very high (smallest changes will trigger MD)

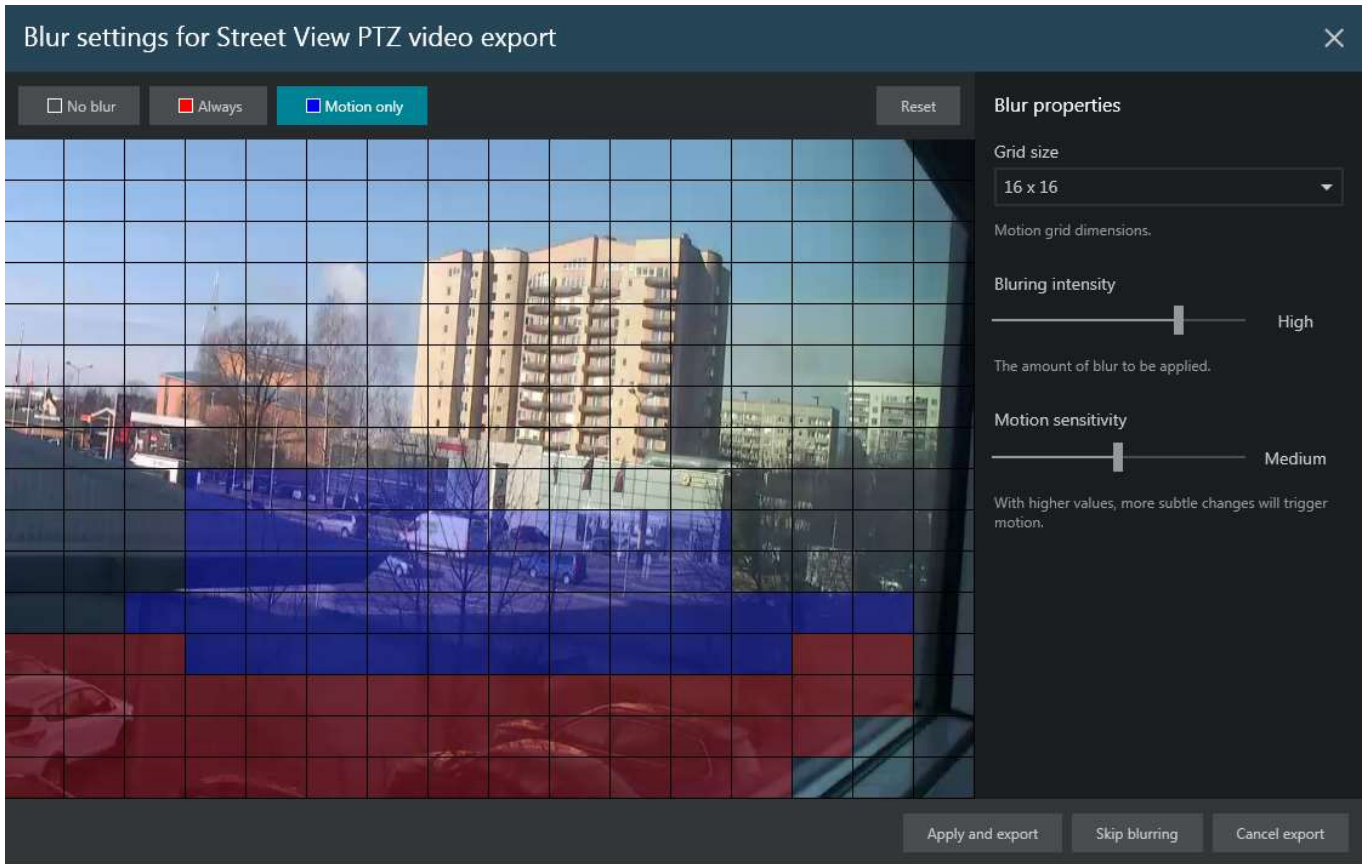
Then, draw detection areas over the preview image. Simply select the area type and mark the desired grid cells according to the required masking levels:

- **no blur** (transparent, no colour)
- **blur always**, regardless of motion presence/absence (**red area**)

Luxriot EVO Monitor User Guide

- **motion blur** with specified sensitivity (**blue** area)

By default, when the blur dialog box is opened, the whole image is marked blue, which stands for **motion blur** only. Draw over with a different colour to change the detection type.



Privacy masking using motion blur

When ready, click *Apply and export*: your video clip will be then exported with the blurring effect. Depending on the selected blur settings and video clip size, this may take some time: the selected part of the video stream will be analysed for motion, meaning that the existing motion data, if present, are ignored. This also means that privacy masking can be applied to any video stream, even if there are no motion data present in the archive.

If you wish to discard blurring but still want the video clip to be exported, select *Skip blurring*: the video will be then exported immediately, without privacy masking. Finally, if you have changed your mind and no longer wish to export the video, click *Cancel export* to simply close the dialog box.


Luxriot EVO Monitor User Guide

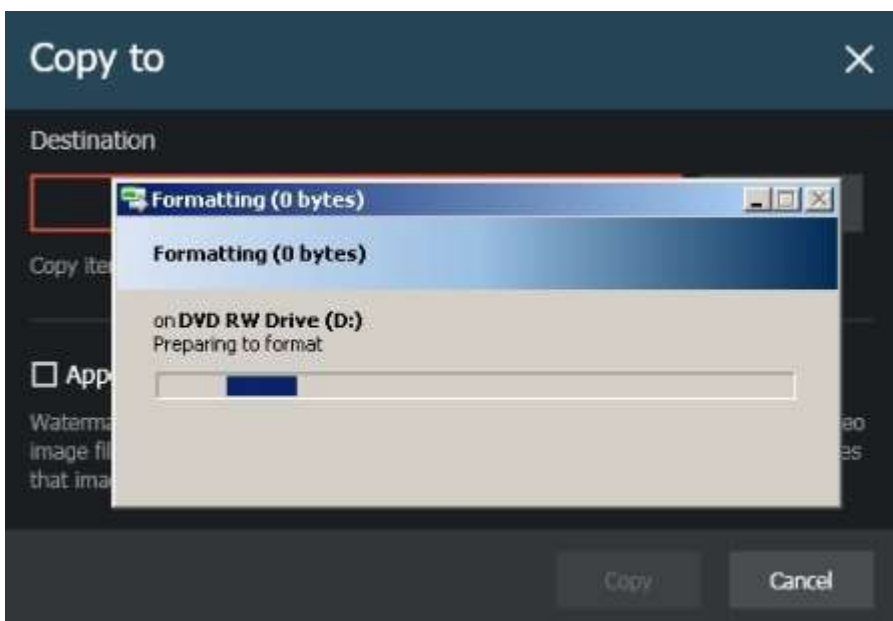
Should you want to **burn the file(s) to a CD/DVD**, additional Windows dialog box will appear.



Choose USB flash drive type

In this dialog box, select the desired option. Insert a CD/DVD into your CD/DVD-ROM and click *Next*. Windows will format the media, if necessary (if unformatted). Note that, whichever option you choose, the burning process will be handled by Windows, not by own Luxriot EVO means.

 You can either use a blank CD/DVD or append files multiple times to the same CD/DVD if you use the first - USB flash drive - method, as if the disk were a USB drive.

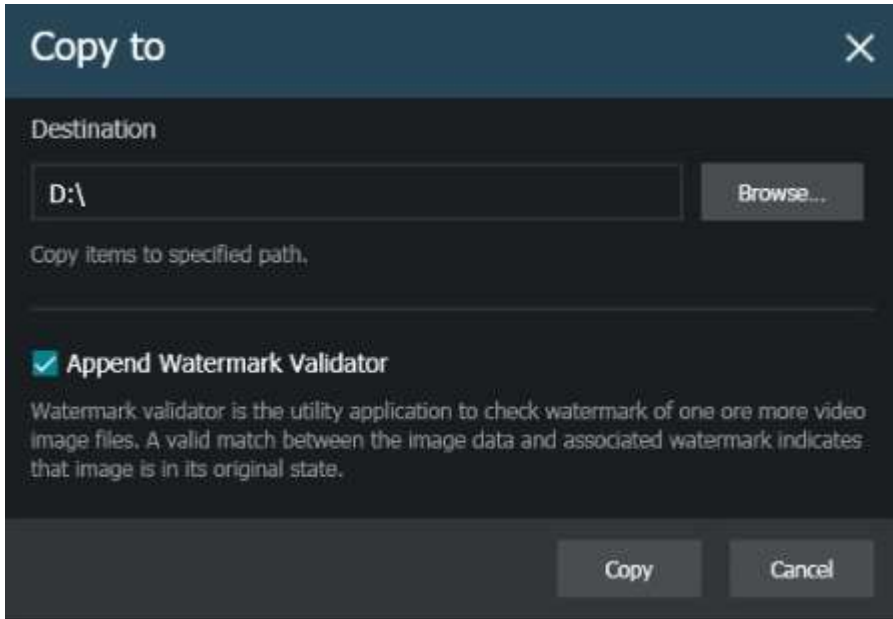


Windows is preparing media

Next, you can select Watermark Validator and/or [Portable Player](#) to be added to the target location together with the file(s).

Watermark validator is a tiny tool that will allow you to check file watermark and confirm they are integral and intact. Note that if you are copying file(s) repeatedly to the same location and watermark Validator already exists there, it will not be added twice. **Portable player** is a standalone media player designed to play back media files created by Luxriot EVO.

Luxriot EVO Monitor User Guide



Review your preferences before copying

When ready, hit *Copy* to transfer the files to the specified location. If you have chosen to burn a CD/DVD, Windows will handle the burning process.

NAME	STATUS	DATE ADDED	SIZE ON DISK
Copy to "D:\\" 1 item(s)	15%	1/6/2017 4:54:34 PM	33 MB
2017-01-02 15-29-11 VCA_1.avi	Done	1/2/2017 3:39:14 PM	204.42 MB

Copy progress

Copy progress will be reflected in the library section. When the process is finished, you will be able to:

- use the *Show in Windows Explorer* button on the upper panel to open file destination
- open and play the file(s) using Luxriot EVO portable player
- open and play the file(s) using standard Windows or third-party video player on the same or on a different computer
- run Watermark Validator and check file integrity by dragging and dropping them into the validator window