



wavestore
integrity in digital recording

Wavestore Video Recording System

User Quick Start Guide Version 5.30

Reference: ENG-0013-MAN-07

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Preface

This document is intended for as a quick reference guide for commonly used user functions on the Wavestore system, when accessing the server from a networked Windows PC.

For full information on the Wavestore system, please refer to the main Wavestore Software Manual (Document No: ENG-0009-MAN-21), which can be downloaded from the Wavestore website (<http://www.wavestore.com>).

Section 1 Logging into/Disconnecting from the Wavestore Server

1.1 Connecting to the Server



Figure 1.1 WaveView Desktop shortcut icon

Click on the WaveView desktop icon to launch the WaveView client software program on your PC.

The WaveView client screen will appear as below:

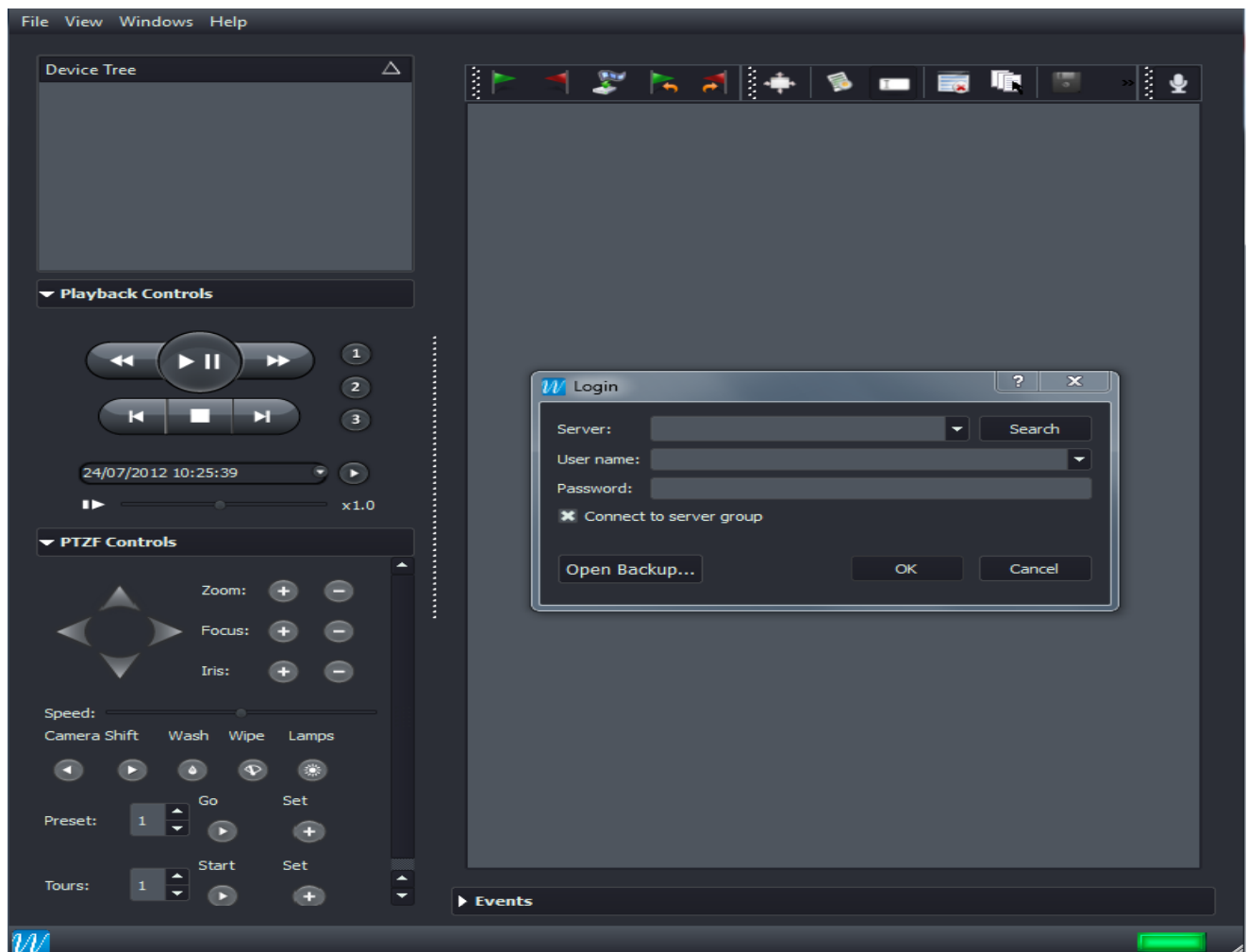


Figure 1.2 WaveView launch screen

The default server login is as follows:

- **Server:** *[IP address of server – your installer/IT administrator will provide this]*

- *User Name:* [valid user logon ID – default is 'user']
- *Password:* [valid user password – default is 'a']

Leave the 'Connect to server group' box checked.

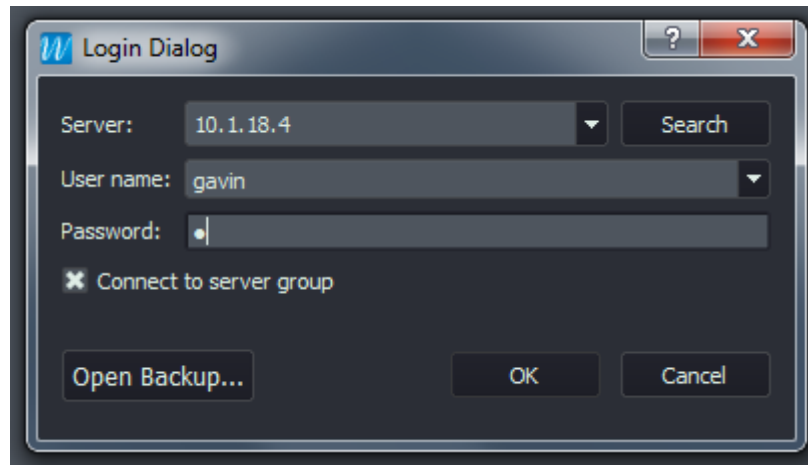


Figure 1.3 WaveView login screen

Click on 'OK' to connect to the server.

1.2 Connecting to the Server using Server Address Book

The Login Dialog box can be associated with a CSV file (on a local PC or networked resource) that can act as a server 'address book'. This file can contain user configured details such as site location, IP address, and optionally login details such as user name and password.

This feature can be useful for a client installation that is used to connect to Wavestore servers at multiple sites.

A CSV file can be created using Microsoft Excel; an example is shown below:

ID	Site Type	Location	County	IP	Username	Password
1	Production Site	Fraserburgh	Grampian	10.1.18.4	user	a
2	Logistics Depot	East Ardsley	Yorkshire	10.1.18.173	user	a
3	Disposal Site	Salford	Manchester	10.0.0.4	user	a
4	Production Site	Bodmin	Cornwall	10.1.2.31	user	a
5	Logistics Depot	Wakefield	Yorkshire	10.1.18.173	user	a
6	Production Site	Ashton	Manchester	10.1.5.1	user	a
7	Production Site	Stockton	Teesside	10.1.37.17	user	a
8	Production Site	Tipton	Birmingham	10.1.4.7	user	a
9	Production Site	Bromborough	Liverpool	10.1.5.41	user	a
10	Logistics Depot	Alverley	Yorkshire	10.1.18.173	user	a
11	Production Site	Wavertree	Liverpool	10.1.5.6	user	a
12	Production Site	Grimsby	Lincolnshire	10.3.2.31	user	a
13	Production Site	Malton	Yorkshire	10.6.2.17	user	a
14	Logistics Depot	Daventry	Northampton	10.1.18.173	user	a
15	Production Site	Tottenham	London	10.6.3.17	user	a
16	Production Site	Scropton	Derbyshire	10.6.5.65	user	a
17	Production Site	Norwich	Norfolk	10.4.8.31	user	a
18	Production Site	Boston	Lincolnshire	10.2.1.17	user	a
19	Logistics Depot	Chester	Cheshire	10.1.18.173	user	a
20	Disposal Site	Acton	London	10.0.0.4	user	a
21	Production Site	Wincanton	Somerset	10.3.4.13	user	a
22	Logistics Depot	Reading	Berkshire	10.1.18.173	user	a
23	Production Site	Merthyr Tydfil	Gwent	10.5.3.48	user	a
24	Production Site	Cumbernauld	Glasgow	10.7.4.36	user	a
25	Production Site	Oswestry	Shropshire	10.1.4.51	user	a

Figure 1.4 Example CSV file

Once associated with the CSV file, WaveView will use the data on Line 1 of the file as column headings in the Server Search screen, as shown below.

To associate the CSV file with WaveView, click on 'Search' on the Login Dialog screen, and in the Server Search screen that appears, click 'Browse', and locate your saved CSV file.

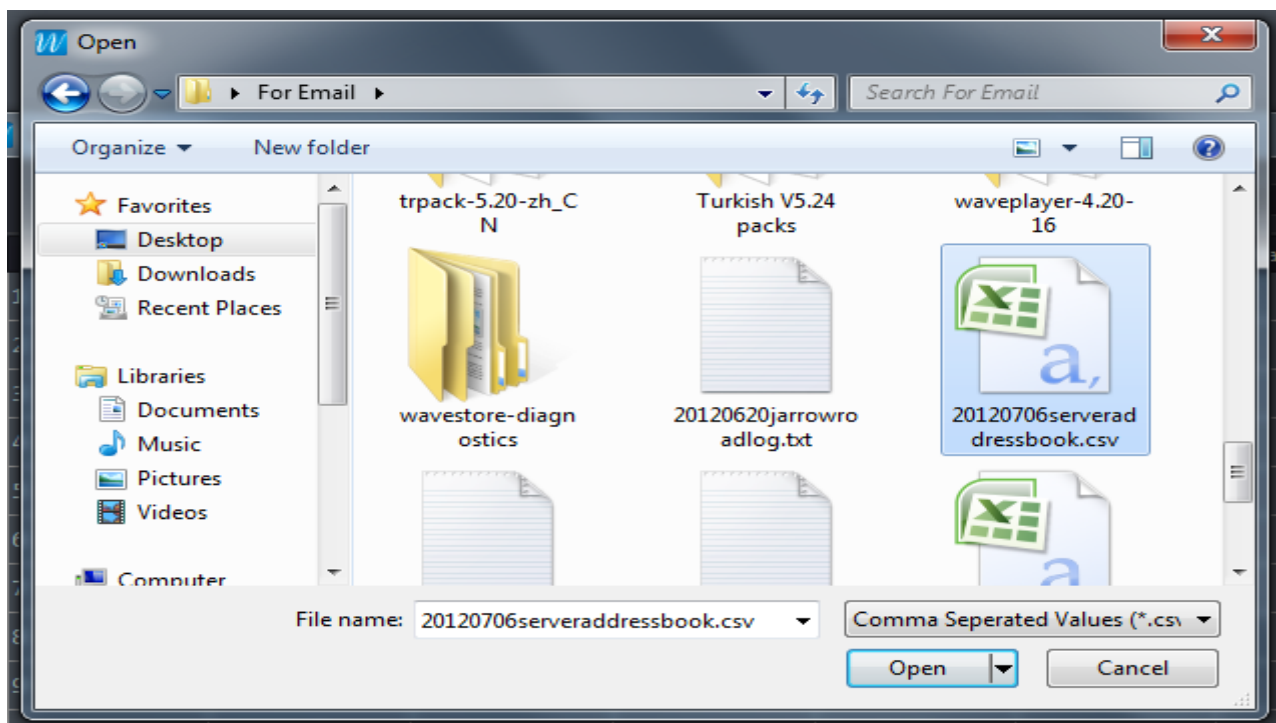


Figure 1.5 Browsing to locate CSV file

The contents of the CSV file will now be loaded by WaveView:

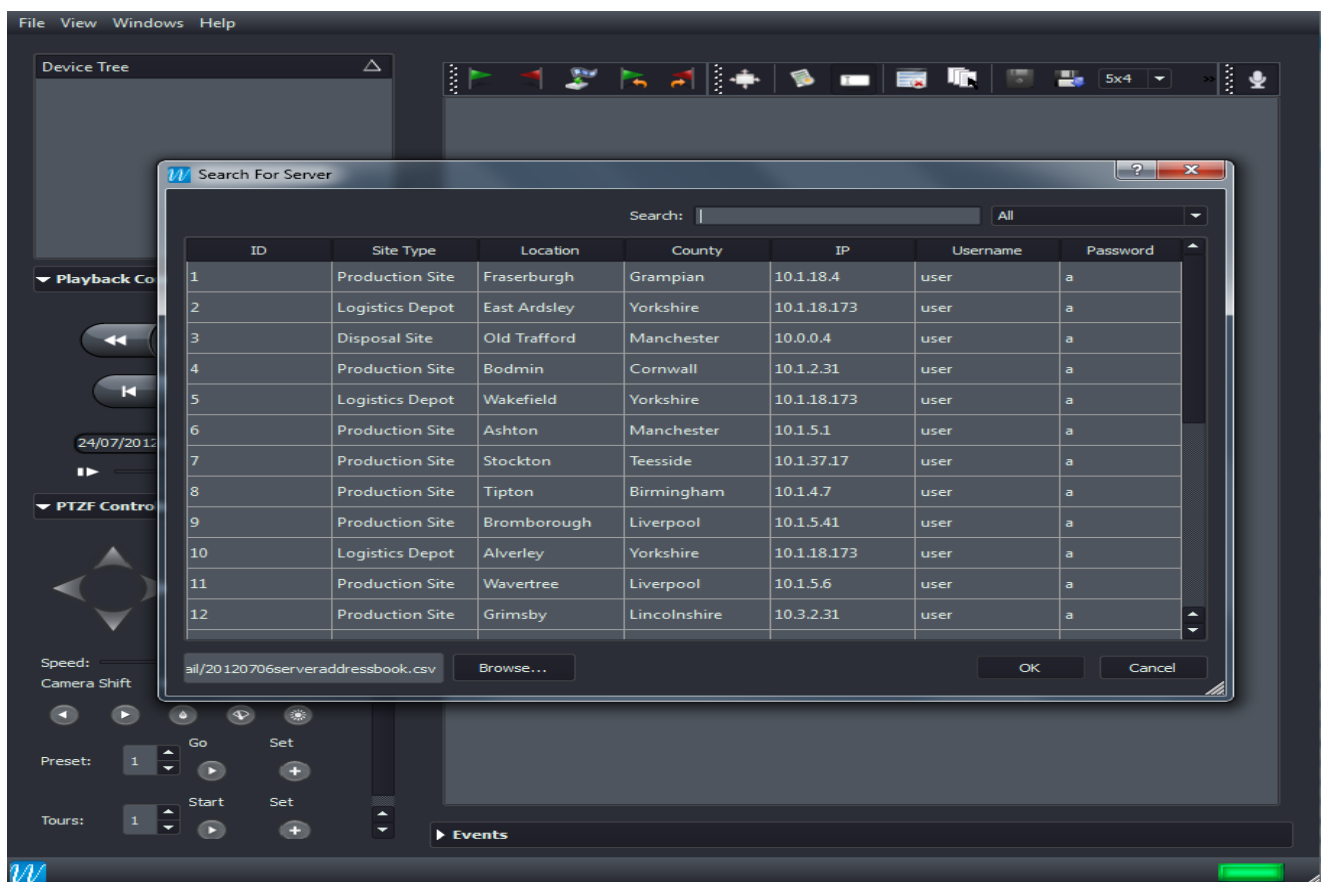


Figure 1.6 CSV File loaded into WaveView

You can search the list manually to select a server by using the side slider bar, or by entering text into the 'Search' field:

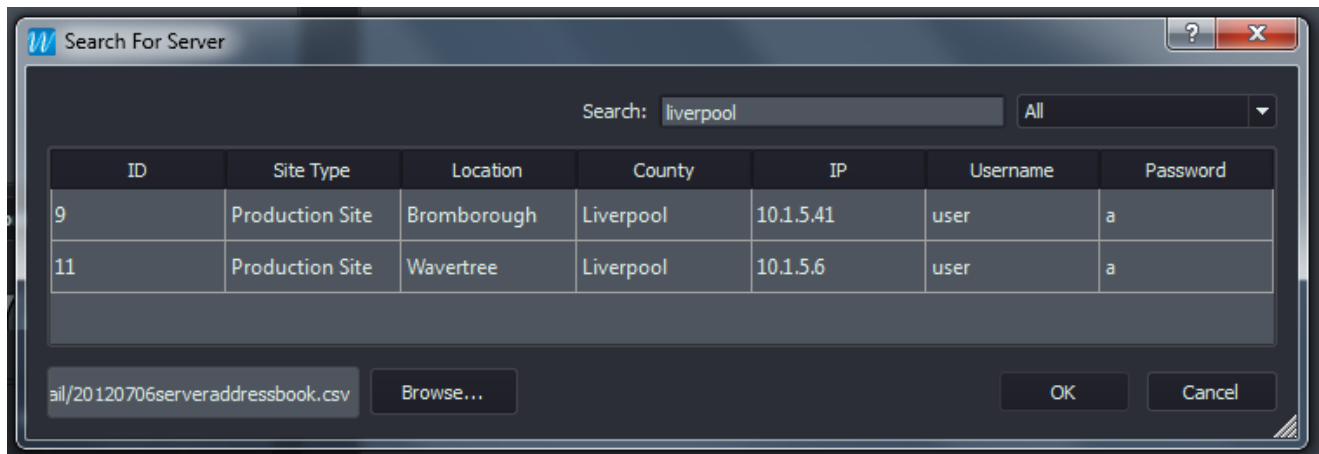


Figure 1.7 Searching address book for text 'liverpool'

You can also click on the category headings to sort the listed sites according to the data in the selected column:

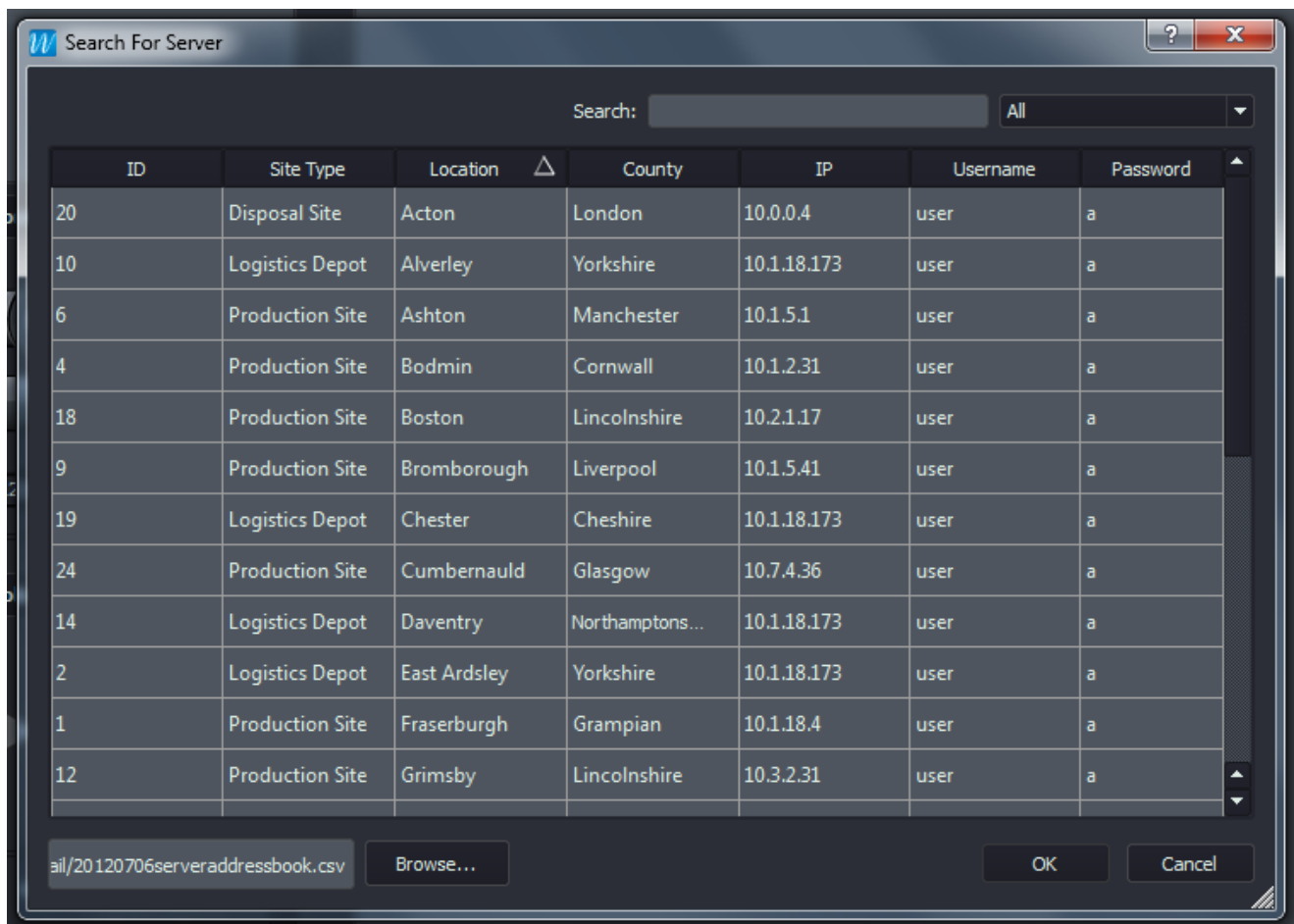


Figure 1.8 Sorting address book using 'Location' data

Once you have located the server that you require (e.g. 'Bromborough'), double click on the server entry in the list, and the fields in the Login Dialog box (including User Name and Password if this data is contained within the CSV file) will be auto populated.

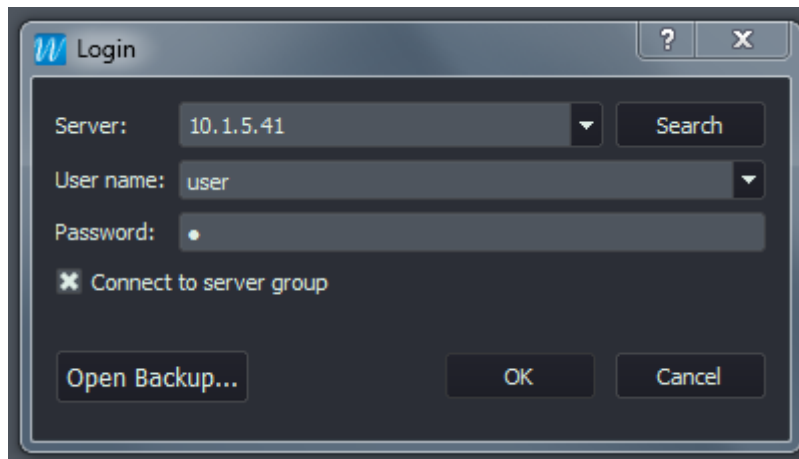


Figure 1.9 Auto population of Login Dialogue Box

1.3 Disconnecting from the Server

Follow the menu path *File -> Disconnect* to disconnect from the Wavestore server

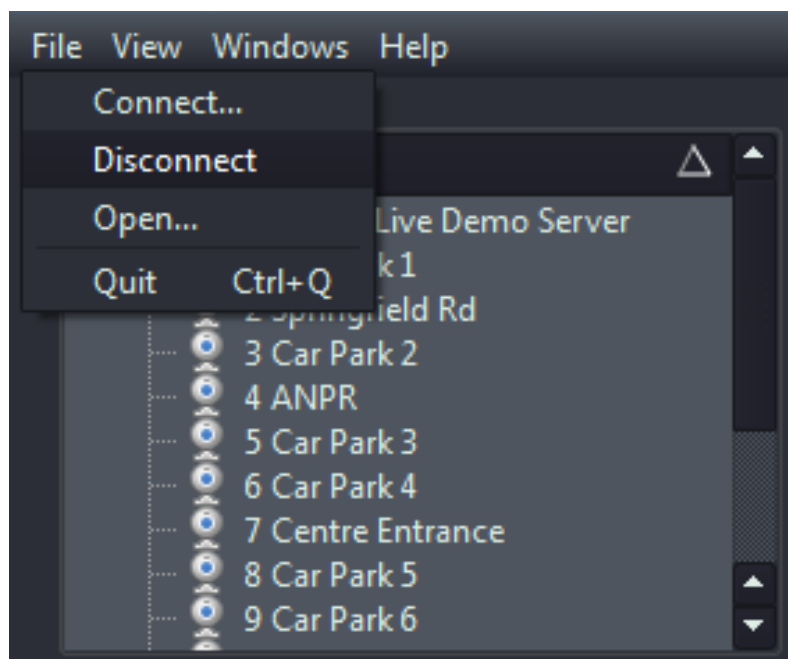


Figure 1.10 Disconnecting from Server

If you wish to exit from the software, follow the menu path *File -> Quit*.

Section 2 WaveView Main Screen Layout

2.1 Overview

The WaveView main screen is shown below:

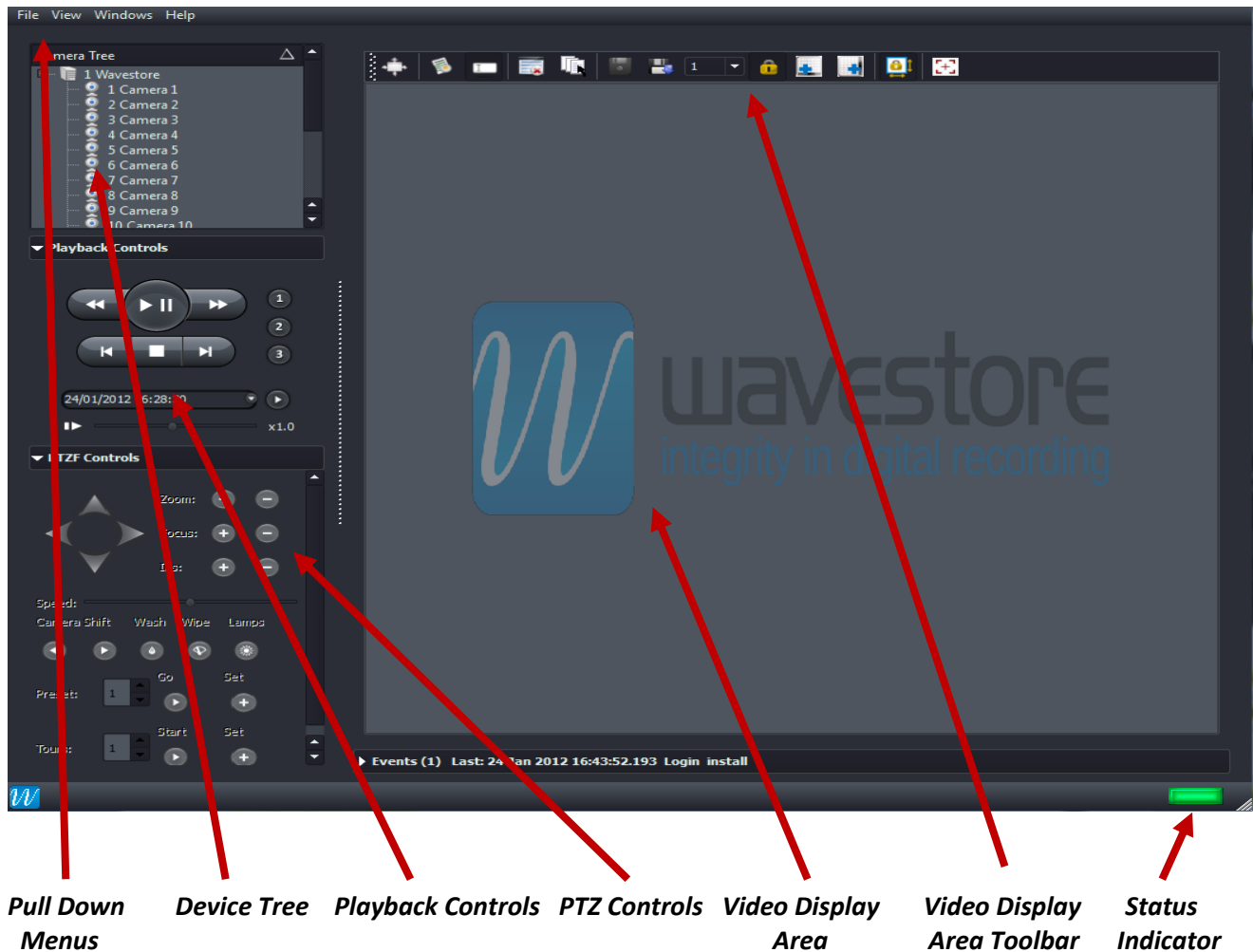


Figure 2.1 - WaveView Live View Screen

This screen contains the following items:

Pull Down Menus	<i>File/View/Windows/Help – these are described in Section 2</i>
Device Tree	<i>Displays a list of the connected Wavestore servers, with active audio/video channels</i>
Playback Controls	<i>Used for searching recorded footage</i>
PTZ Controls	<i>Used for control of Pan/Tilt/Zoom cameras</i>
Video Display Area	<i>Video Displays from system cameras can be added here</i>
Video Display Area Toolbar	<i>Used for controlling individual Video Displays</i>
Status Indicator	<i>normally displays Green, changes to Red when a connected server has a fault</i>

Once we have added Video Displays for the cameras to the Video Display Area (as described in Section 3), the Live View screen will appear as below:

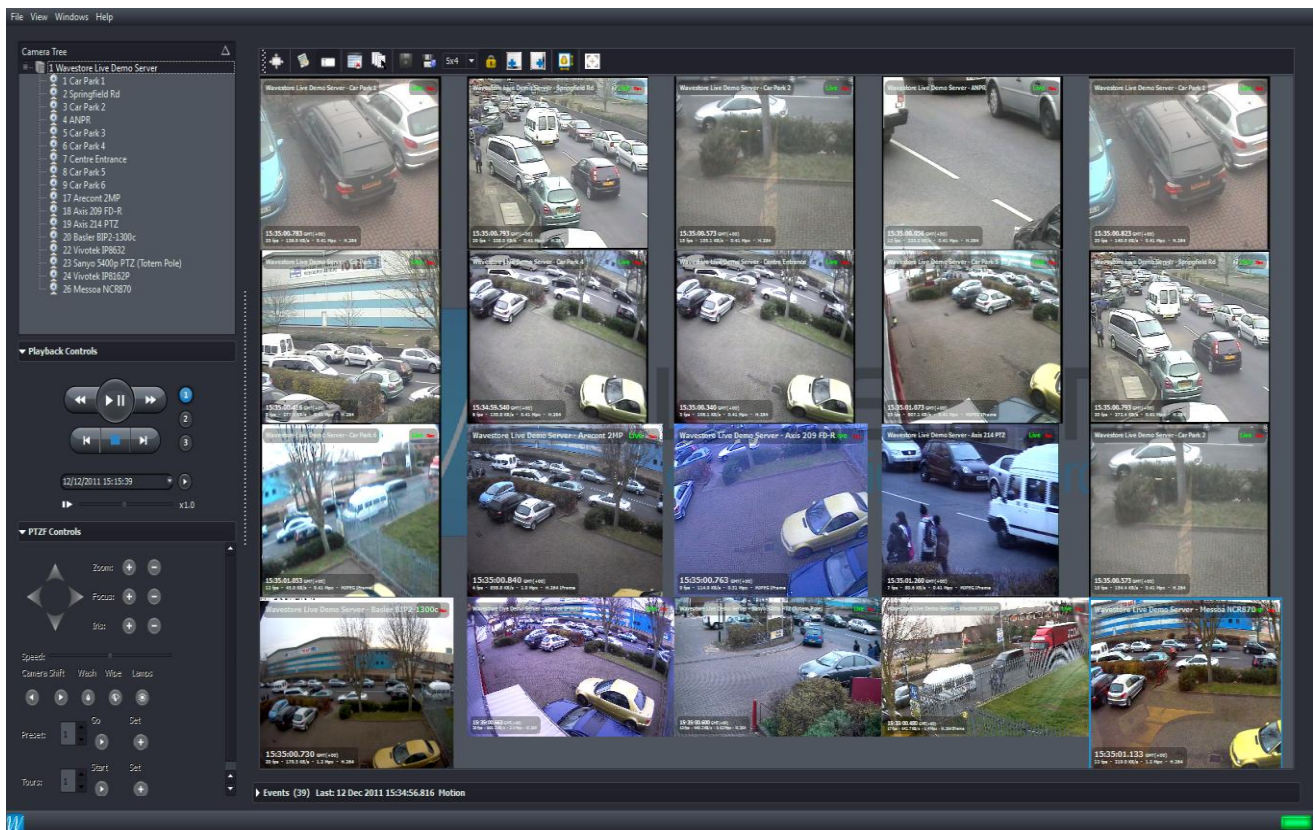


Figure 2.2 WaveView Live View Screen with Video Displays Added

The Video Display Area can be freely configured, and can show both Live View and Playback from the same camera(s) if you wish.

The same camera can be displayed in multiple windows simultaneously, e.g. showing playback from different dates/times simultaneously.

2.2 File Menu

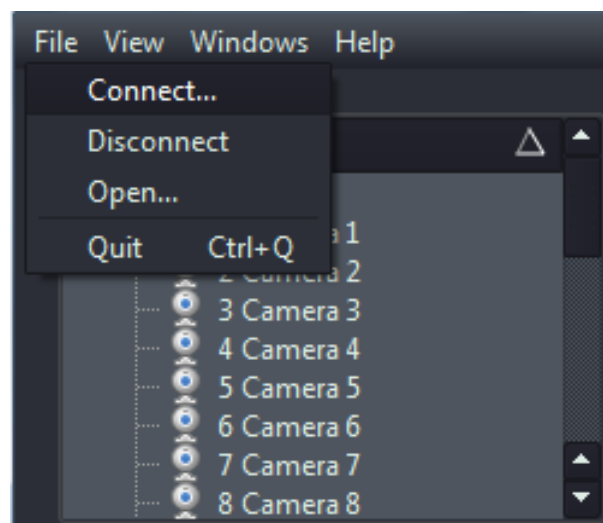


Figure 2.3 File Pull Down menu

- **Connect** *Connects the WaveView Client PC to the Wavestore Server(s)*
- **Disconnect** *Disconnect WaveView Client PC from the Wavestore Server or Server Group*
- **Open** *Opens a Backup File from a DVD or USB device (you must disconnect from any servers first)*
- **Quit** *Closes the WaveView program*

2.3 View Menu

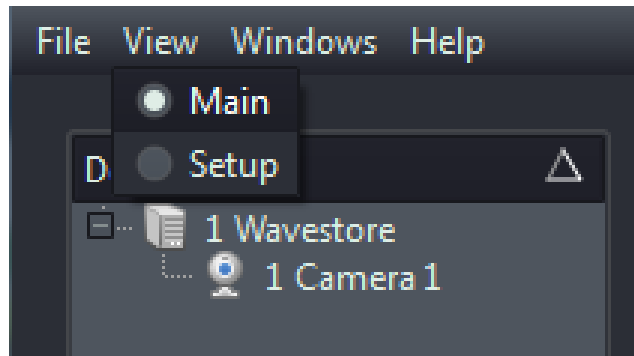


Figure 2.4 View Pull Down menu

- **Main** *Live View Screen containing Video Display Area, where we can view cameras*
- **Setup** *Allows an installer to configure of settings on the Wavestore Server or Server Group*

2.4 Windows Menu

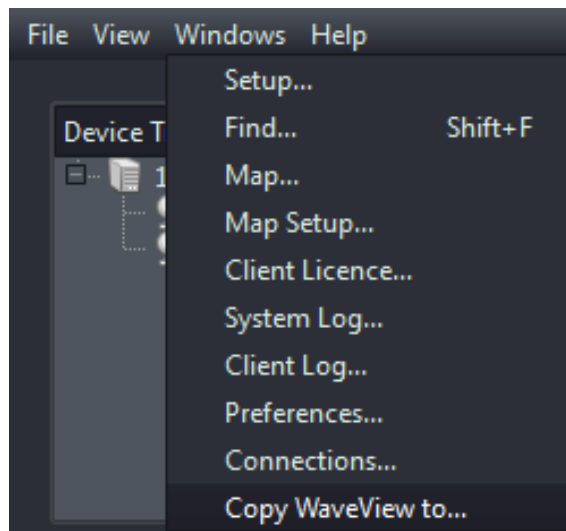


Figure 2.5 Windows Pull Down menu

- **Setup** *Allows an installer to configure settings on the Wavestore Server or Server Group*
- **Find** *Search Recorded Footage (you may also Backup Footage from this screen)*
- **Map** *View Camera Maps Configured on the Server (Licensed Option)*
- **Map Setup** *Configuration of Camera Maps (Licensed Option)*
- **License** *View the License associated with this Client*
- **System Log** *Log of Events on the connected Server(s)*
- **Client Log** *Log of Events on the WaveView client*

- **Preferences** Configuration Options for Languages and Left/Right Handed User Screen Orientation
- **Connections** List of Clients currently connected to the servers (User Name and IP Address)
- **Copy WaveView to** Send a copy of the WaveView .exe installation file to a selected folder

2.5 Help Menu

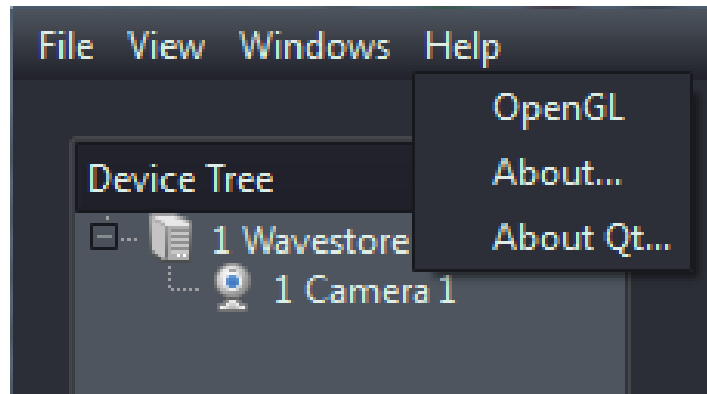


Figure 2.6 Help Pull Down menu

- **OpenGL** Information on the OpenGL version contained within the WaveView software
- **About** Information on the WaveView software version, and details of Client PC and Server(s). Clicking on the 'System Info' button gives further information regarding the Server and Client devices



Figure 2.7 About WaveView Screen

- **About Qt** Information on the Qt version contained within the WaveView software

2.6 Device Tree

Once WaveView has connected to the Wavestore server(s), the Device Tree will appear showing a list of the connected Wavestore server(s), with their devices such as camera and audio inputs.

Any Virtual Camera Views configured from a Hemispheric or Wide Angle cameras will be listed with blue icons, beneath that camera:

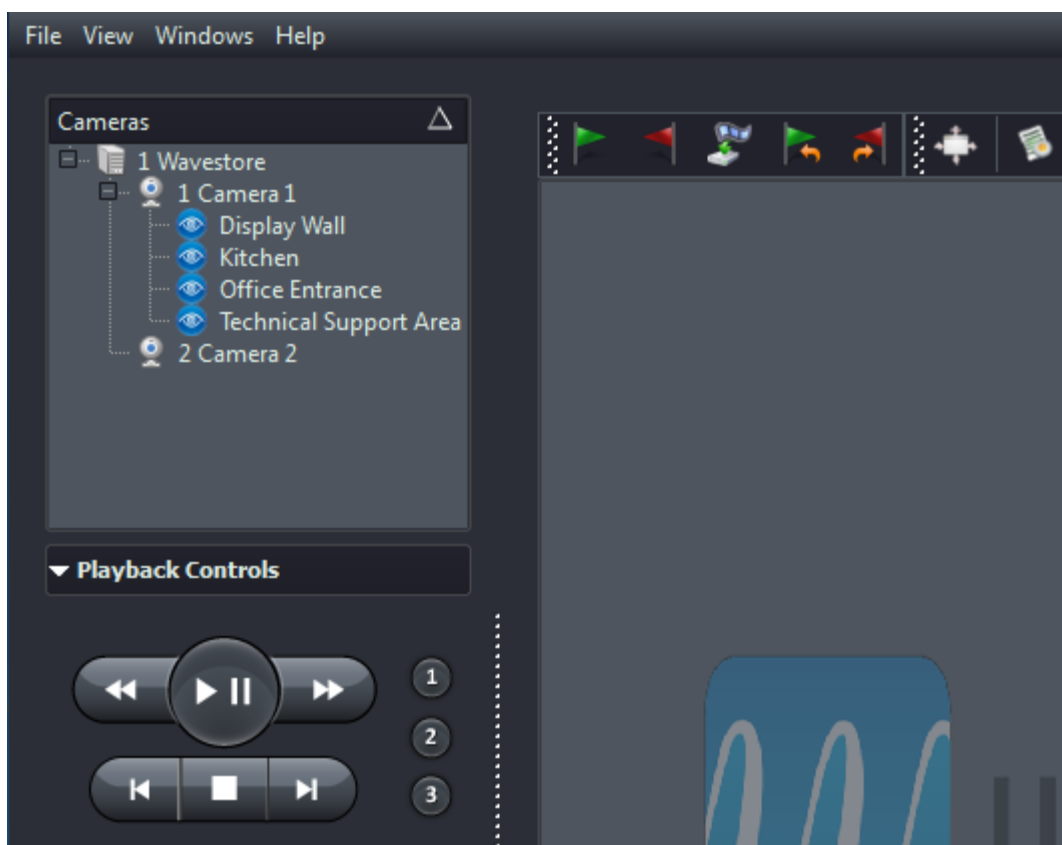


Figure 2.8 Main operating screen showing Device Tree

- Right clicking on the Device Tree allows you to switch the list between the Camera View (all cameras listed), and the Group Tree view (Cameras listed in Groups according to location, if configured), and also gives toggle options for the display of Channel ID numbers, Disabled Channels, Server Names, Server ID numbers and Virtual Camera Views:

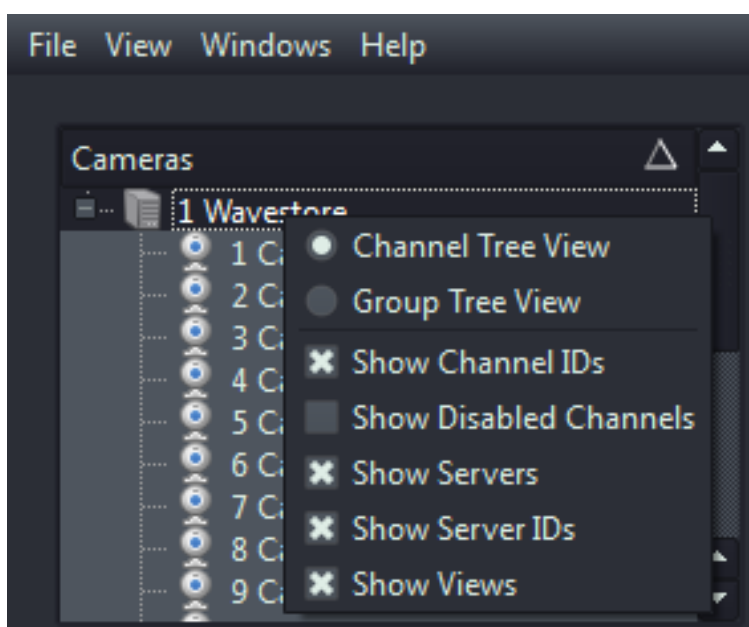


Figure 2.9 Device Tree Menu

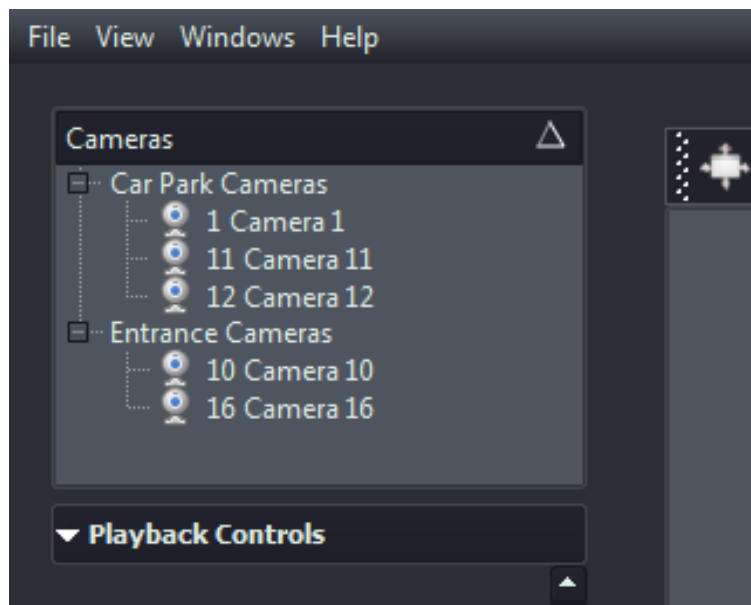


Figure 2.10 Device Tree showing Group Tree View

2.7 System Preferences

The WaveView Client software screen can be personalised using the System Preferences screen (menu path *Windows -> System Preferences*).

This screen allows the following preferences to be set for the local Client software installation (not the server itself):

The screen has five submenus as follows:

System submenu

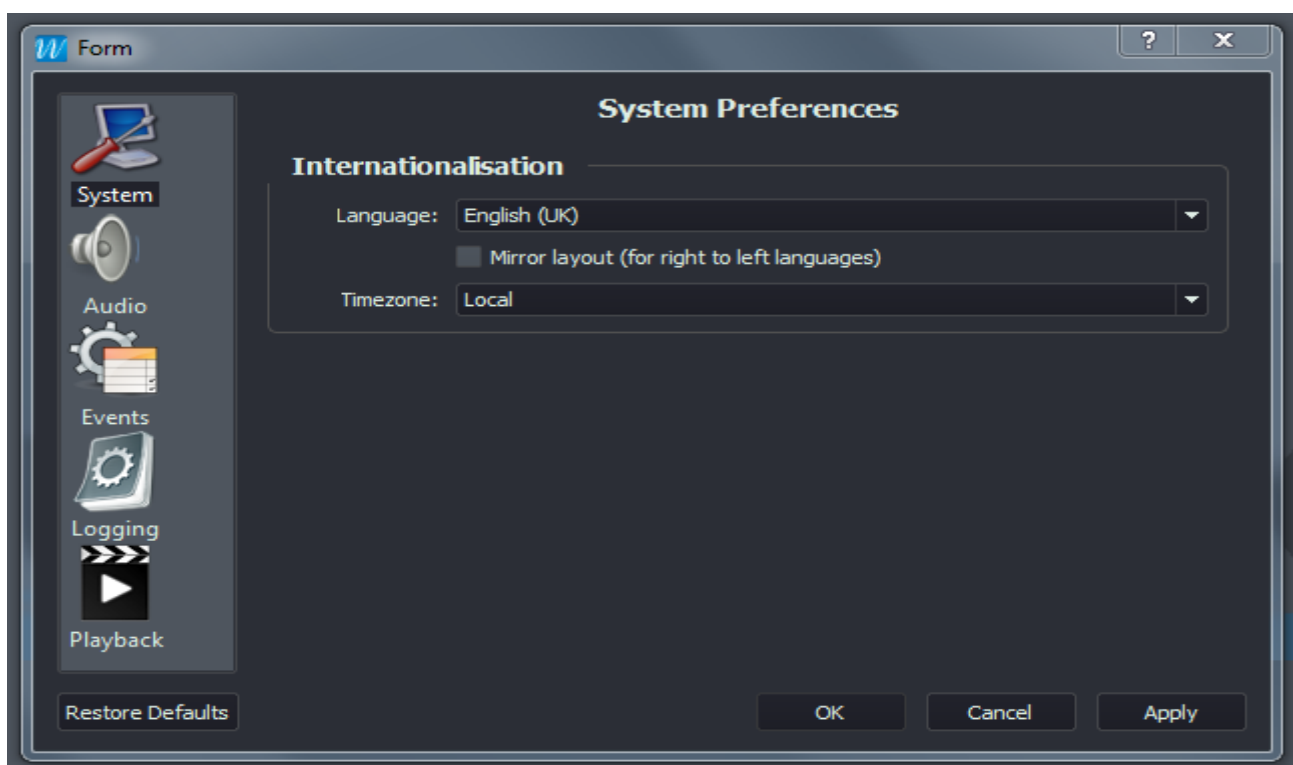


Figure 2.11 Windows Menu, System Preferences screen, System submenu

- *Language display on this client software installation*
- *Mirror the screen layout left -> right (for languages such as Arabic)*
- *Time zone (Client/Server/UTC)*

Preferences can be configured using the dropdown menus/radio buttons, then applied using the 'Apply' button.

Audio submenu

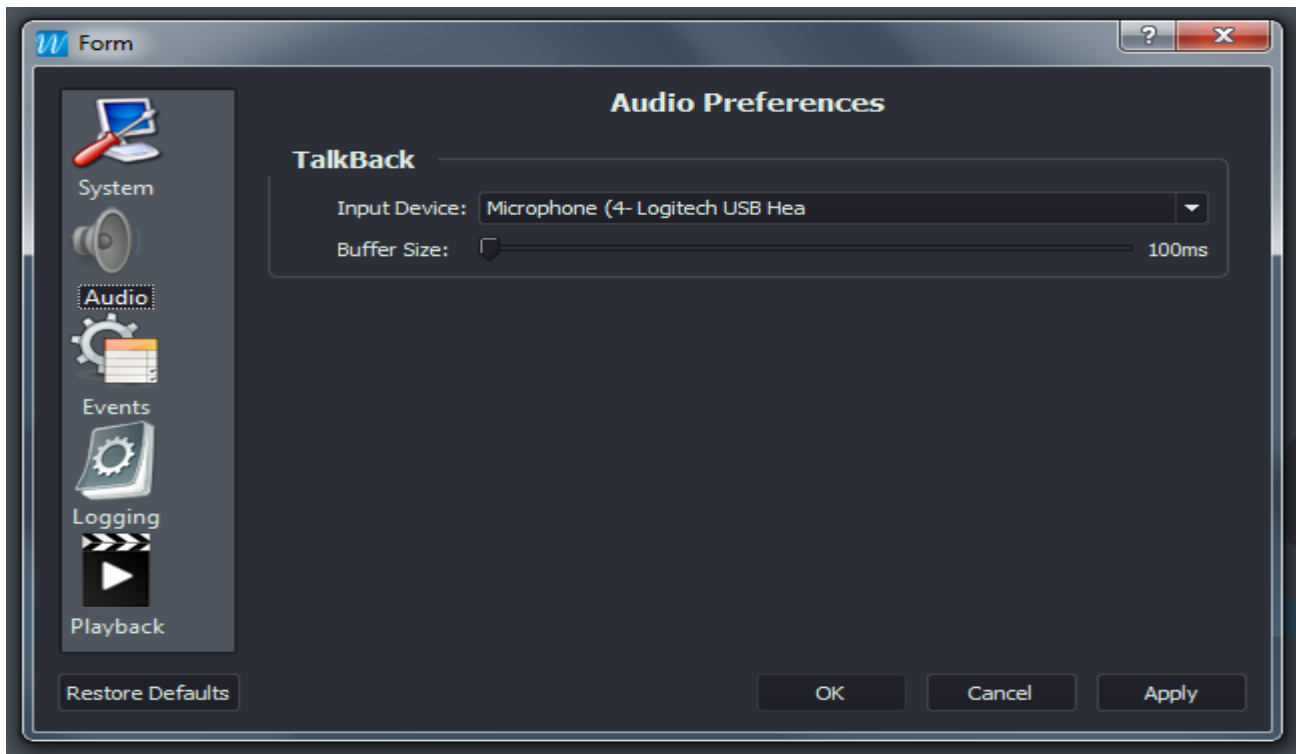


Figure 2.12 Windows Menu, System Preferences screen, Audio submenu

This screen allows you to configure the input device that the local client software operator will use for the TalkBack function; this must to be configured on each client software PC that will be used for TalkBack.

Event Preferences Submenu

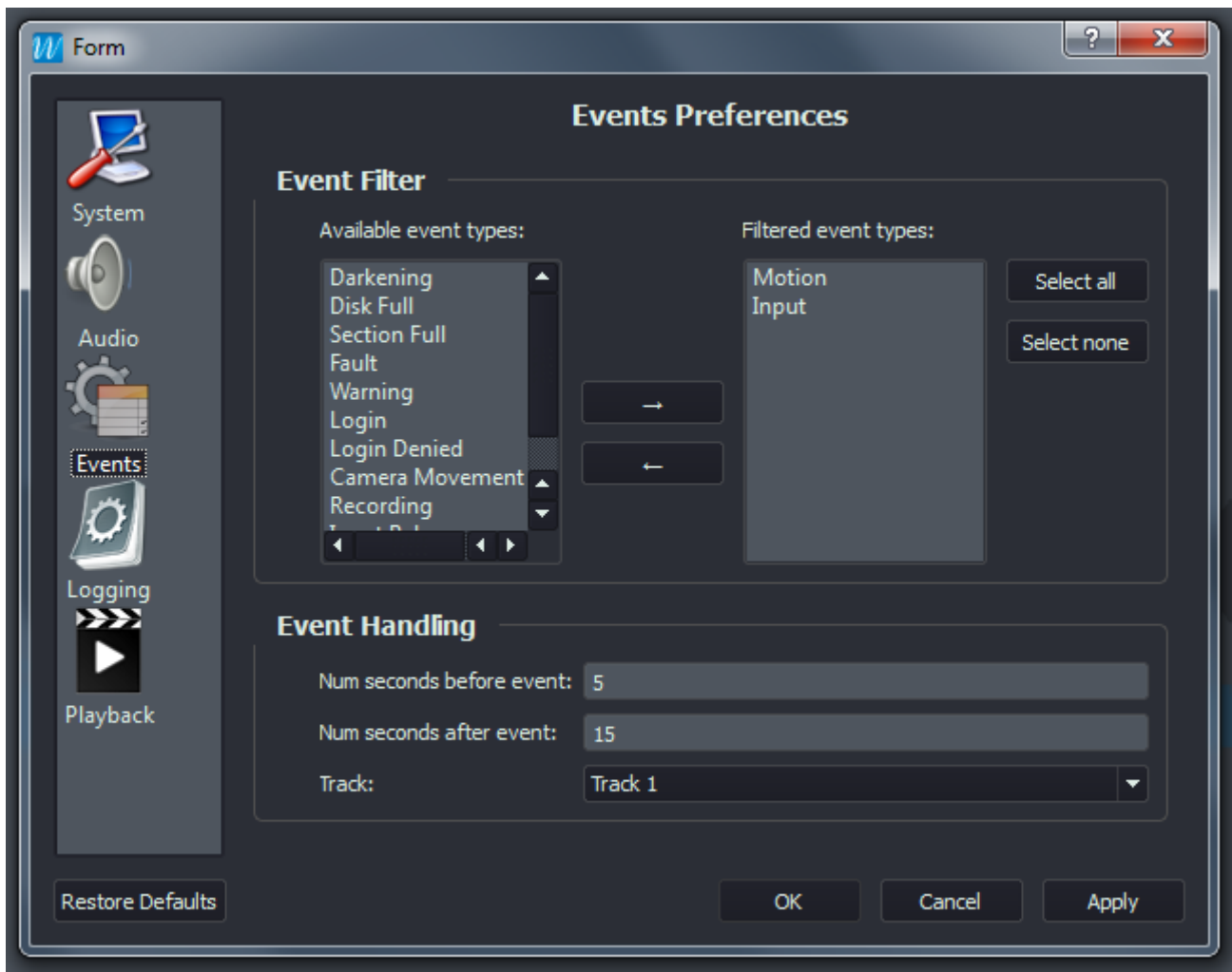


Figure 2.13 System Preferences Menu, Events submenu

If the a Windows PC client software installation has the Event Viewer license activated, a user can manually backup footage for an event (e.g. Alarm Input) by right clicking on that event in the Event Viewer window (see Appendix C)

Backups are created in the native Wavestore .wsb format, and can then be played back using the WaveView software.

The backups are saved to `C:\Users\[username]\WavestoreBackups\EventClips`

The Event Filter section controls which events will be displayed in the Event Viewer window. The Filtered Event Types box lists the events that have been selected to be displayed.

To add a new Event to this list, click on your desired Event in the Available Event Types list (the event name will highlight Dark Grey), then click on '->' arrow key; the event name will now appear in the Filtered Event Types box. To add remove an Event from the Filtered Events Types list, click on your desired Event, then click on '<-' arrow key.

The 'Event Handling' sections control how much footage before and after the actual event will be included with the backup. We can also configure which Recording Track will be backed up.

Logging

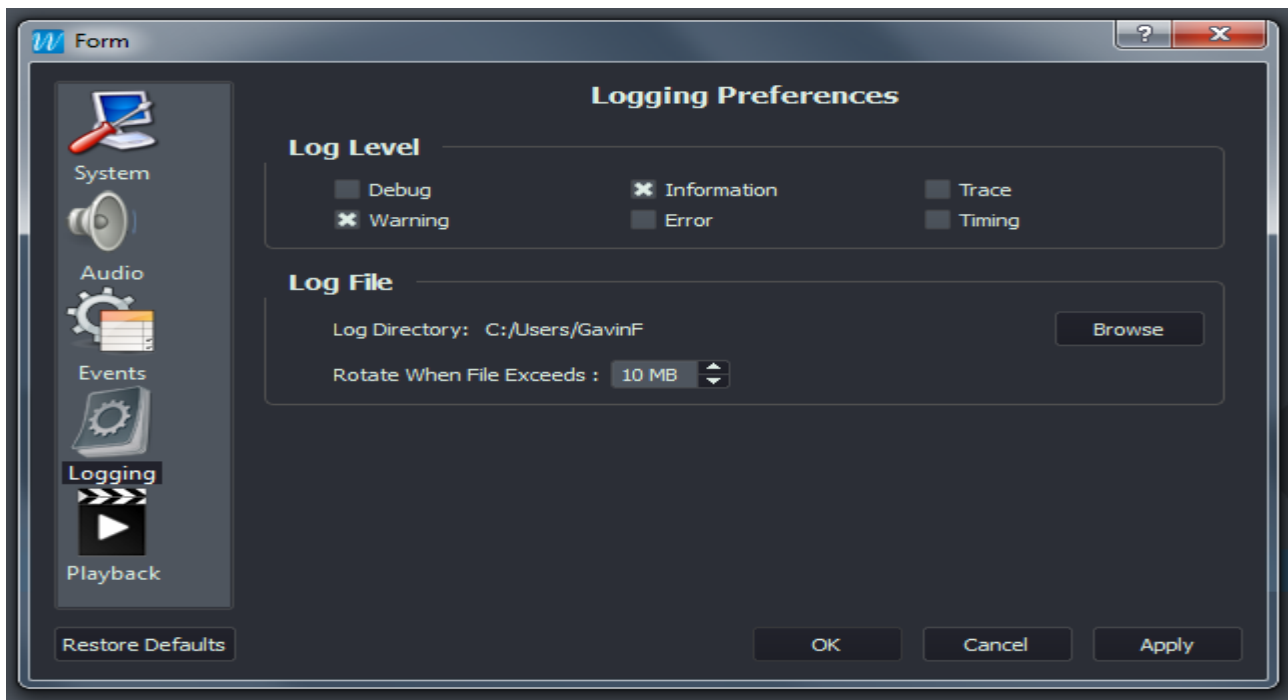


Figure 2.14 System Preferences Menu, Logging submenu

The Logging submenu controls which message types are written to the Client Log (Debug/Error/Information/Warning).

We can also configure which folder on the local PC the log messages are written to, and the size of the folder that will be allocated to these messages.

Playback

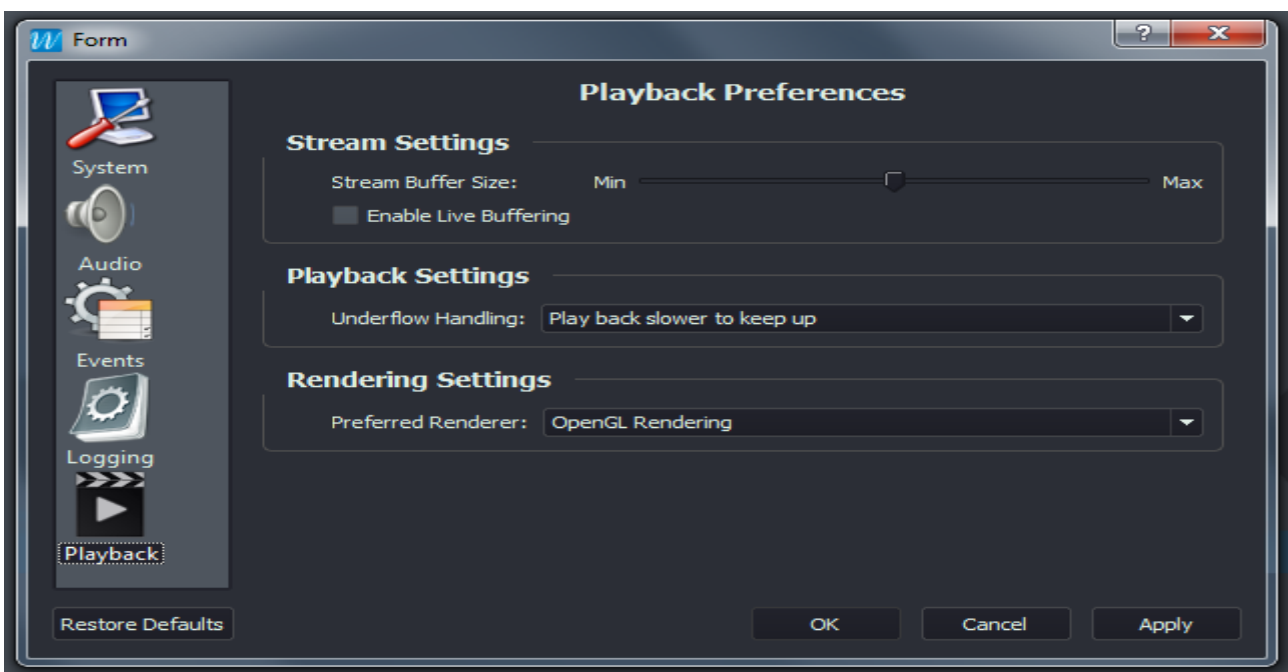


Figure 2.15 System Preferences Menu, Playback submenu

The Playback Preferences menu has the following submenus:

Stream Settings

Increasing the Stream Buffer Size will allow smoother playback in the event of an unreliable network connection between the client and server(s), but will increase latency.

We can also apply this setting to the camera Live View (toggle option).

Playback Settings

We have options to either skip frames or slow down playback in the event of network connection issues between the client and the server(s).

Rendering Settings

OpenGL Rendering is a hardware-accelerated form of display rendering carried out by the GPU on the PC graphics card (provided the graphics card drivers support OpenGL).

This option performs faster than the 'Software Rendering' option, where the PC CPU carries out the display rendering.

Section 3 Viewing Live Cameras

3.1 Video Display Area

Right-clicking on the Video Display Area calls up the context menu, listing the following options:

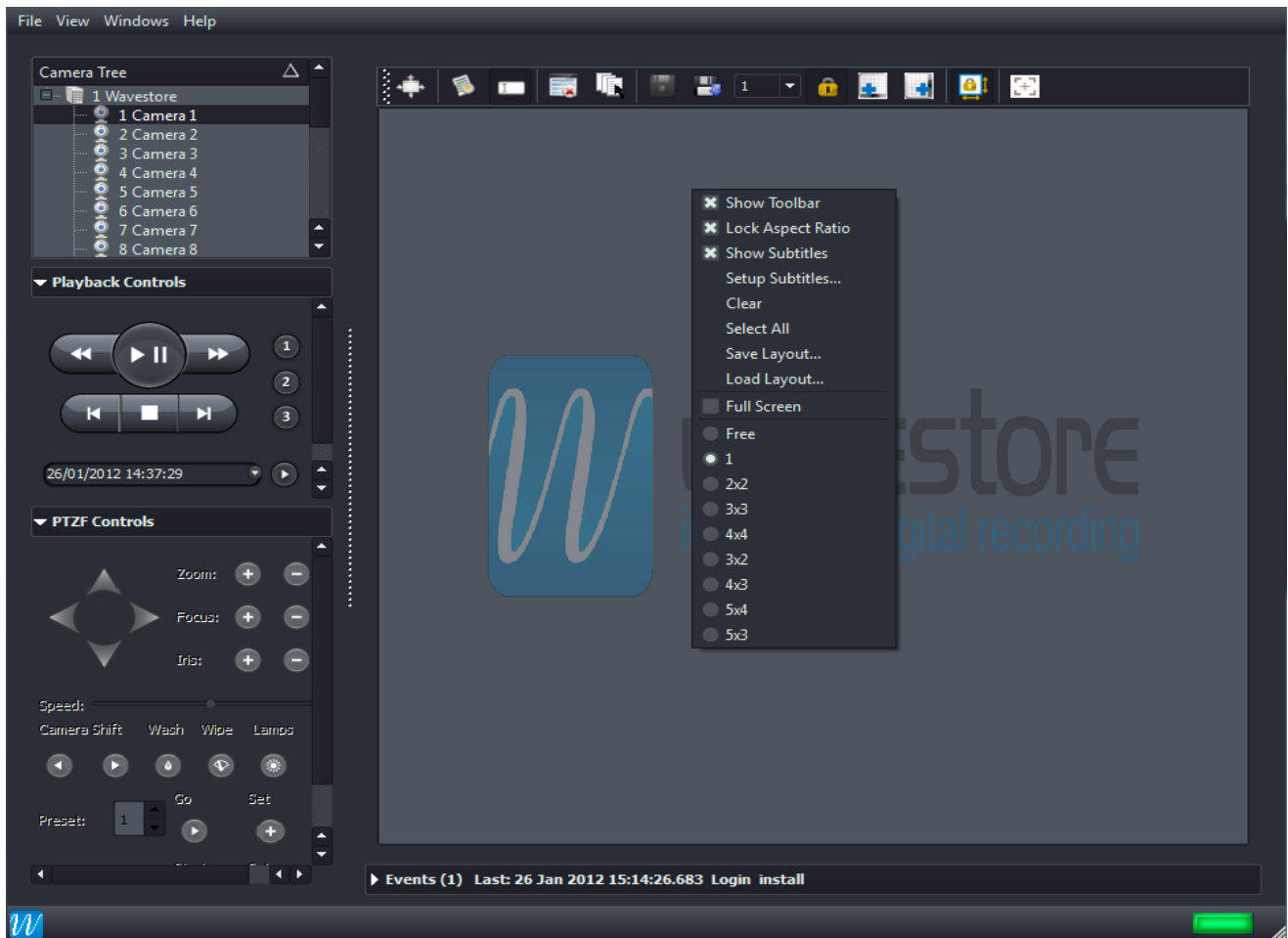


Figure 3.1 Context Menu

- **Camera View Configuration**
 - *Lock Aspect Ratio* - Causes all Video Displays to be fixed to their true height and width
 - *Show Subtitles* – Toggles Video Display subtitles on/off
 - *Setup Subtitles* - Opens the Setup Subtitles screen
 - *Clear* - Removes all Video Displays from the Video Display Area
 - *Select All* - Selects all Video Displays within the Video Display Area
 - *Save Layout* - Saves the current layout (you can choose a name for the layout, e.g. Car Park cameras)
 - *Full Screen* - Expands the Video Display Area to full screen display (to exit from full screen display, right click to call up the Context Menu once again, and toggle the Full Screen option OFF)
- **Camera View Selection**
 - *Free* – You may add views from as many cameras as you wish
 - *1, 2x2, 3x3, 4x4, 3x2, 4x3, 5x4, 5x3* - Switches to a fixed, preset layout of displays
 - *Custom Layout* - Switches to a previously saved layout (e.g. Car Park Cameras)

3.2 Adding Live Camera Views

To add a camera view to the video display area, firstly select which Camera View type you want to use (e.g., 2x2 display) by right clicking on the Video Display area to call up the Context Menu (Figure 3.1), and then left clicking on your desired selection.

Alternatively, click the drop down box at the top of the screen to select the Display Configuration type, or click on the 'Add Row to Display Grid' or 'Add Column to Display Grid' buttons (each marked with a blue [+] symbol on the Video Display Area Toolbar:



Figure 3.2 Display Configuration

To create a Video Display, click the camera you want to view on the Device Tree, so it is highlighted:

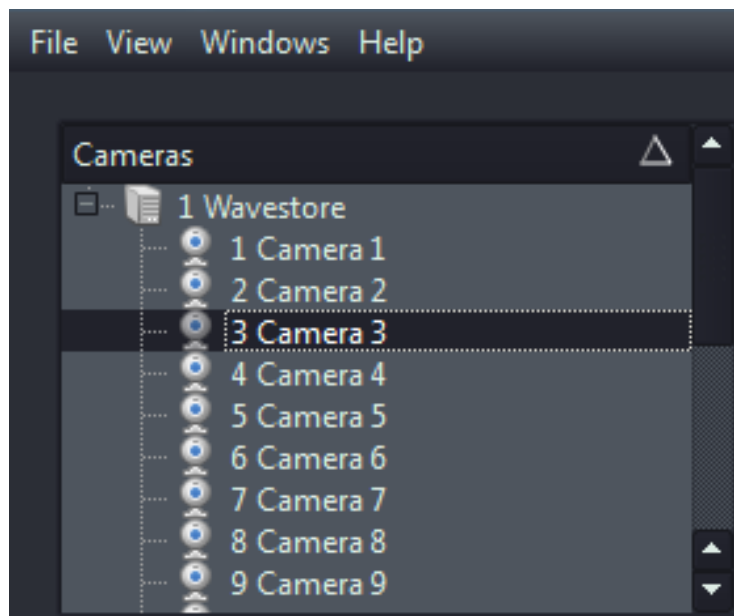


Figure 3.3 Device Tree

Click and drag the camera from the Device Tree onto the Video Display Area (e.g. Camera 3):

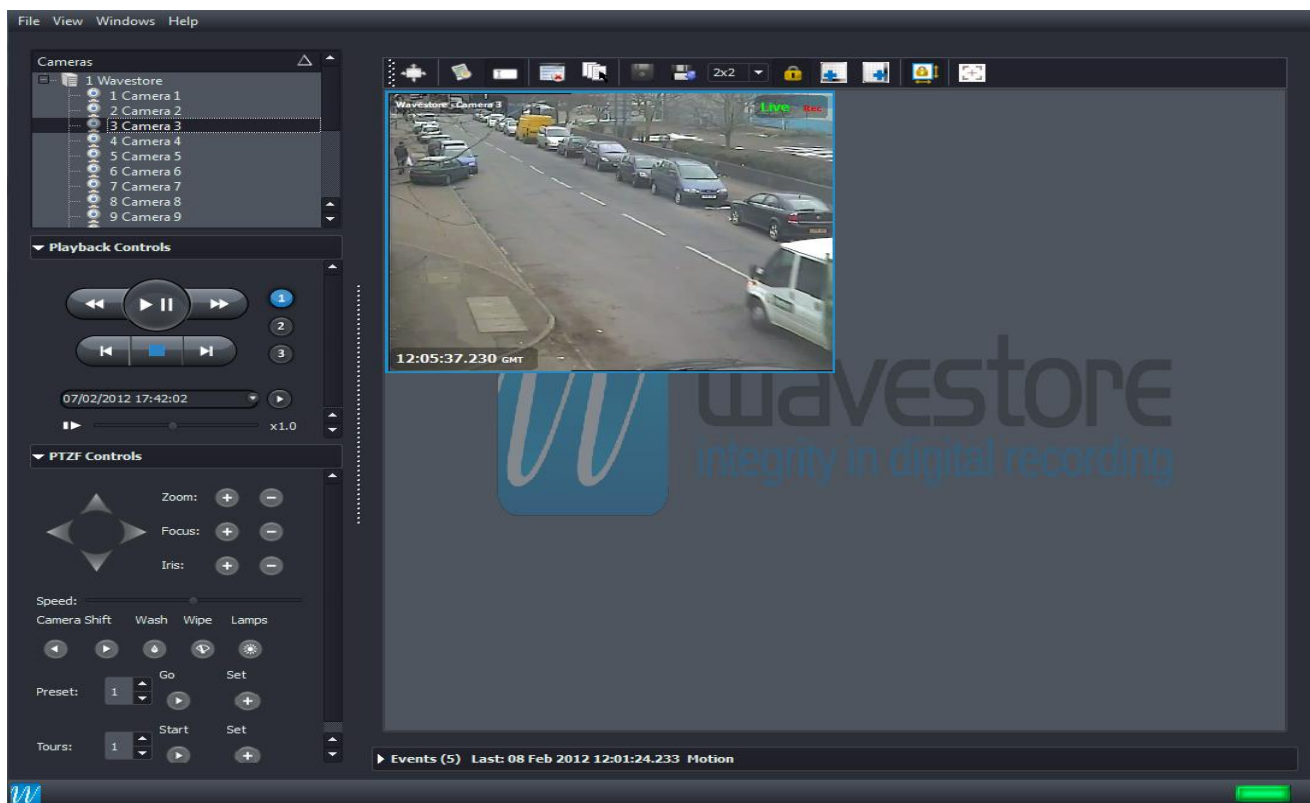


Figure 3.4 Dragging Camera 3 from Device Tree on Video Display Area

Repeat for any other cameras that you want:

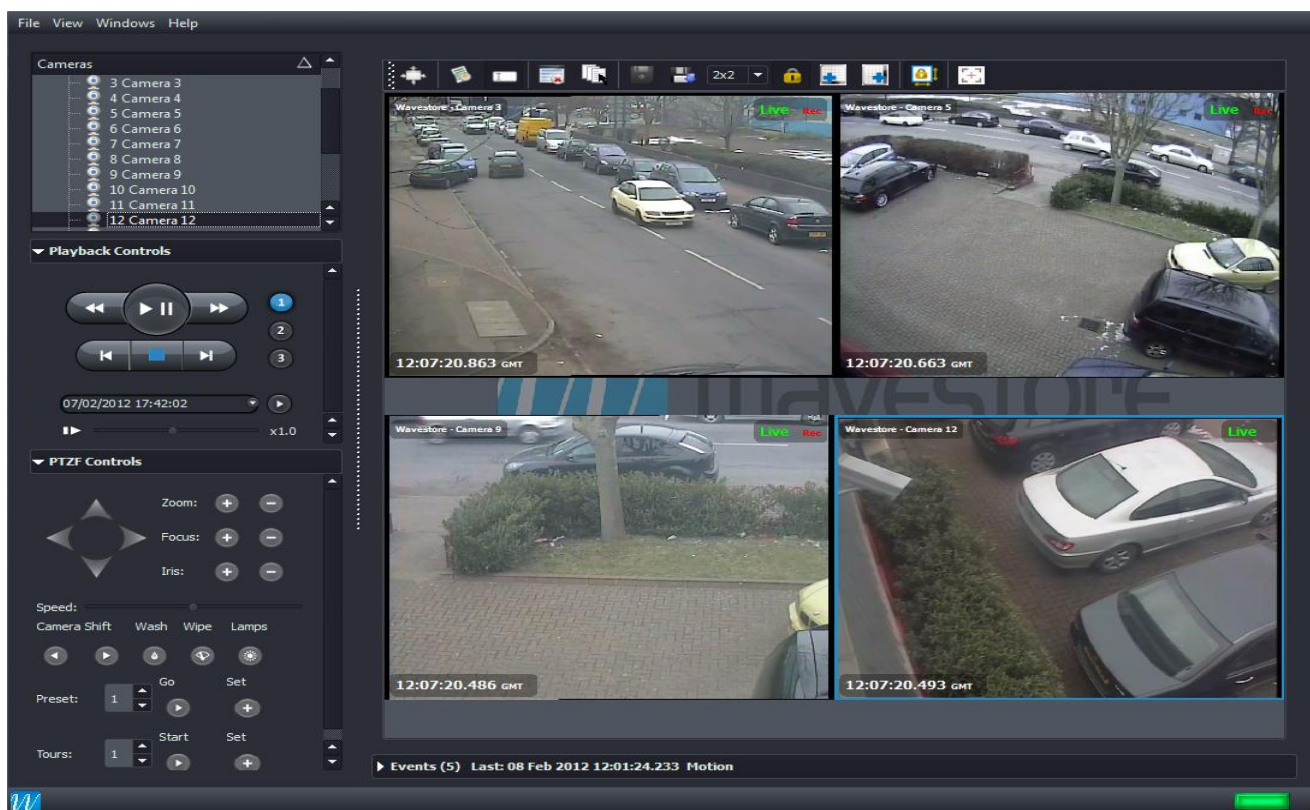


Figure 3.5 Cameras 5, 9 and 12 added from Device Tree to Video Display Area

To select a Video Display for control (for PTZF control/Playback etc.), click on that camera view so that the outline is highlighted blue, as for Camera 3 below.

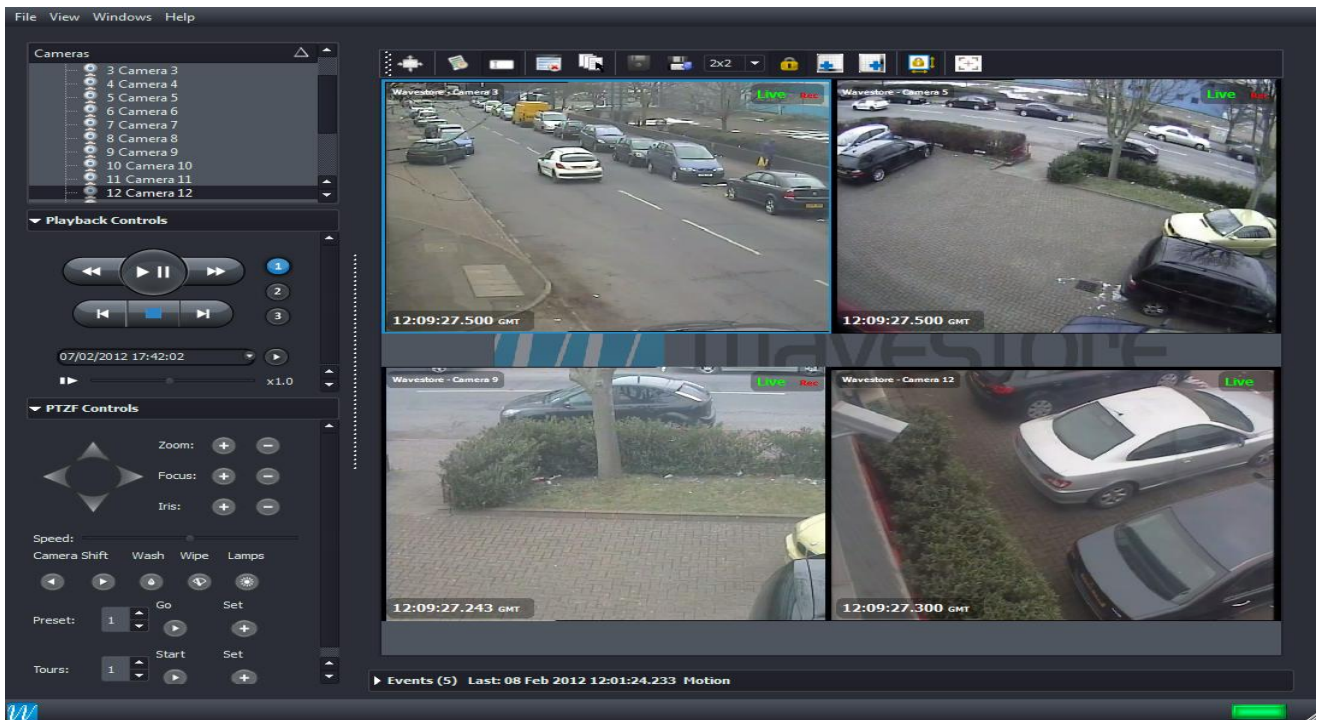


Figure 3.6 Camera 3 active for PTZF control

We can select multiple Video Displays for control (e.g. Search/Playback) by holding down the Left CTRL and clicking on each display to select/deselect that display.

To enlarge an individual Video Display (e.g. Camera 3), double click on the Video Display; the display will now fill the entire Video Display Area.

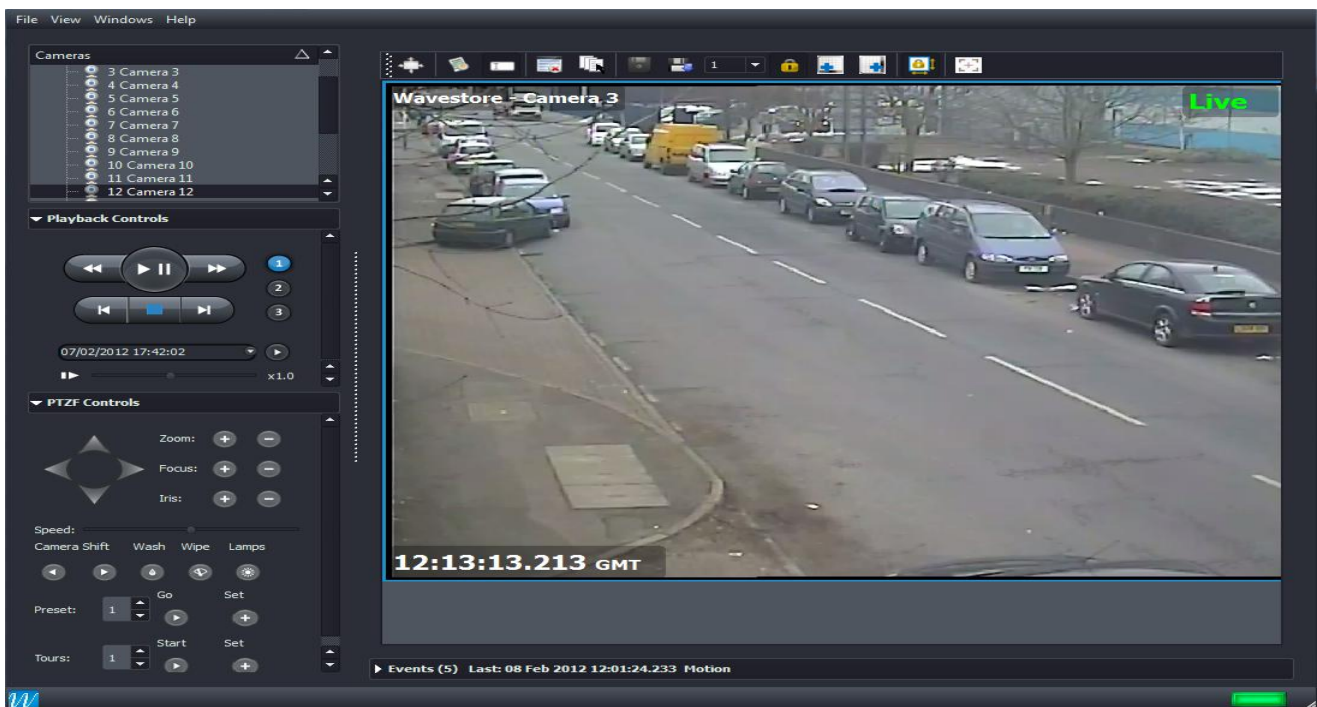


Figure 3.7 Camera 3 view enlarged

Double clicking on the Video Display once again will enlarge the display to fill the entire monitor screen



Figure 3.8 Camera 3 full screen view

To exit from full screen display, right click to call up the Context Menu once again, and click to toggle the 'Full Screen' option OFF.



Figure 3.9 Exiting Full Screen View

To close a Video Display, move your mouse pointer into the top right corner of the display, so that the Video Display Toolbox appears (e.g. the third camera display below):

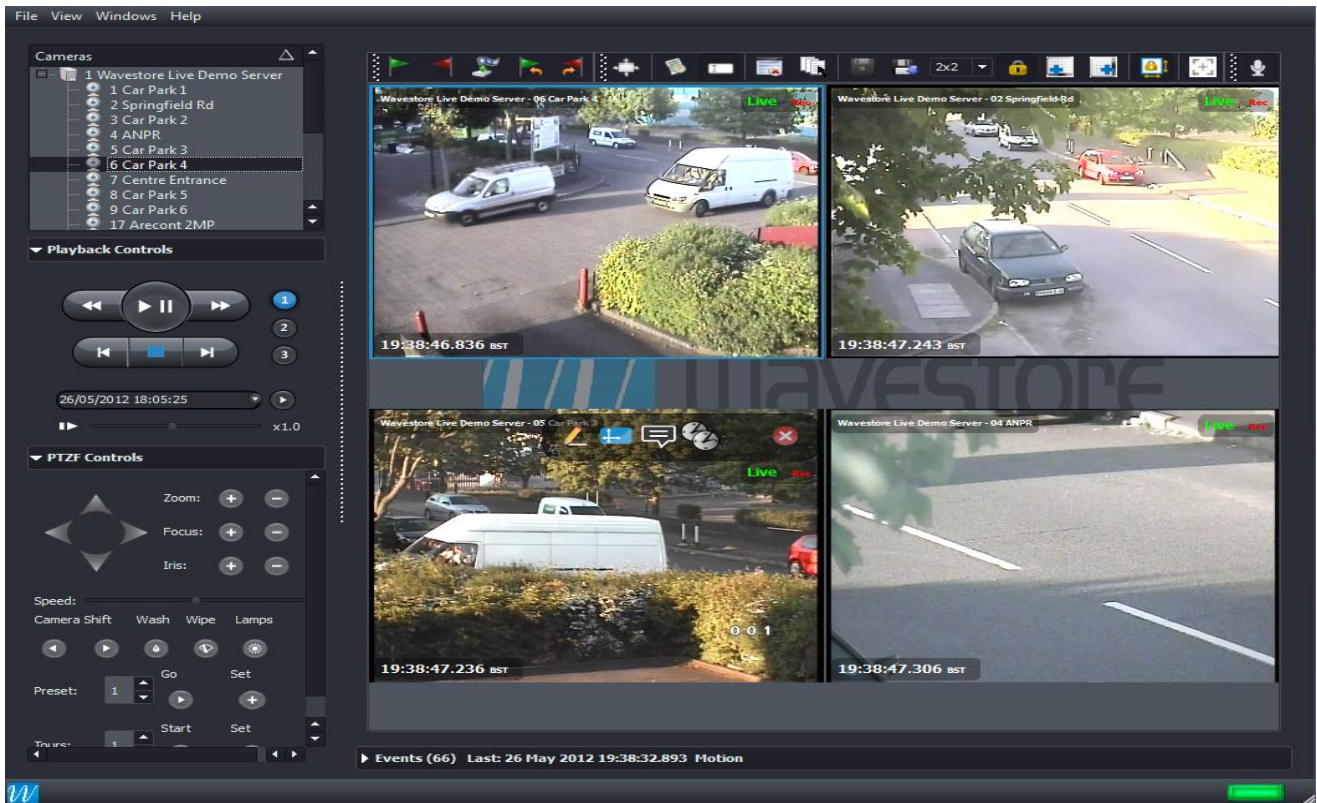


Figure 3.10 Video Display Toolbar displayed on third Video Display

Click on the red 'X' symbol to close that display:

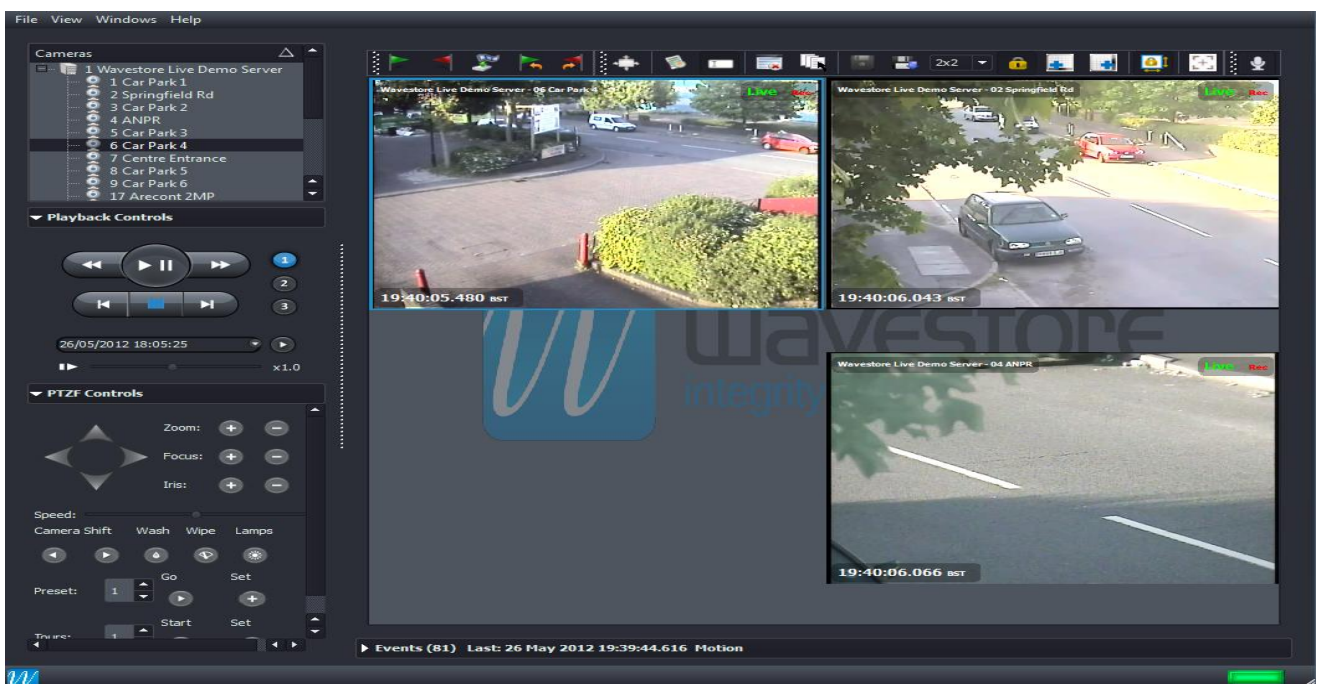


Figure 3.11 Video Display Area after removal after third Video Display

Selecting the 'Free' option from the Display Configuration drop down menu allow you to then move or resize the Video Displays by holding the Left CTRL key and then click and dragging using the Left mouse button:

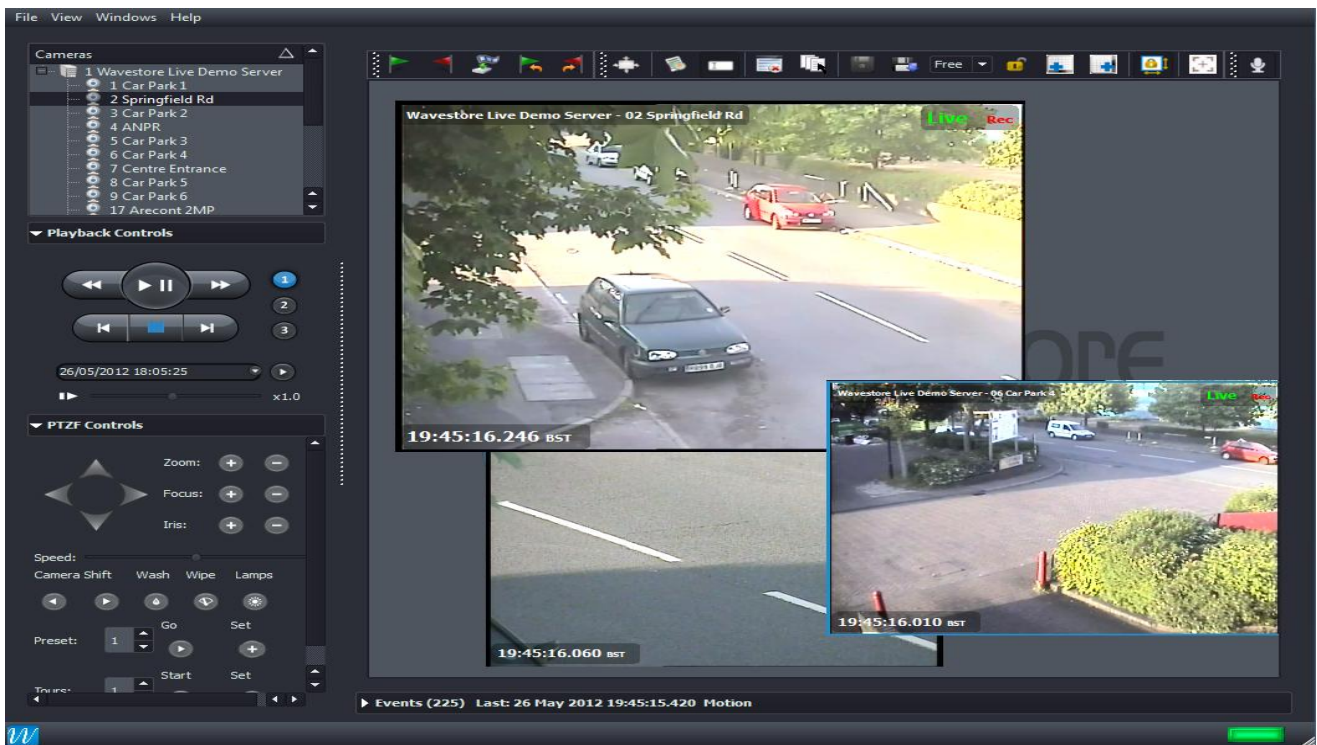


Figure 3.12 Video Displays repositioned and resized

Clicking on a single Video Display brings that display to the front of the screen:

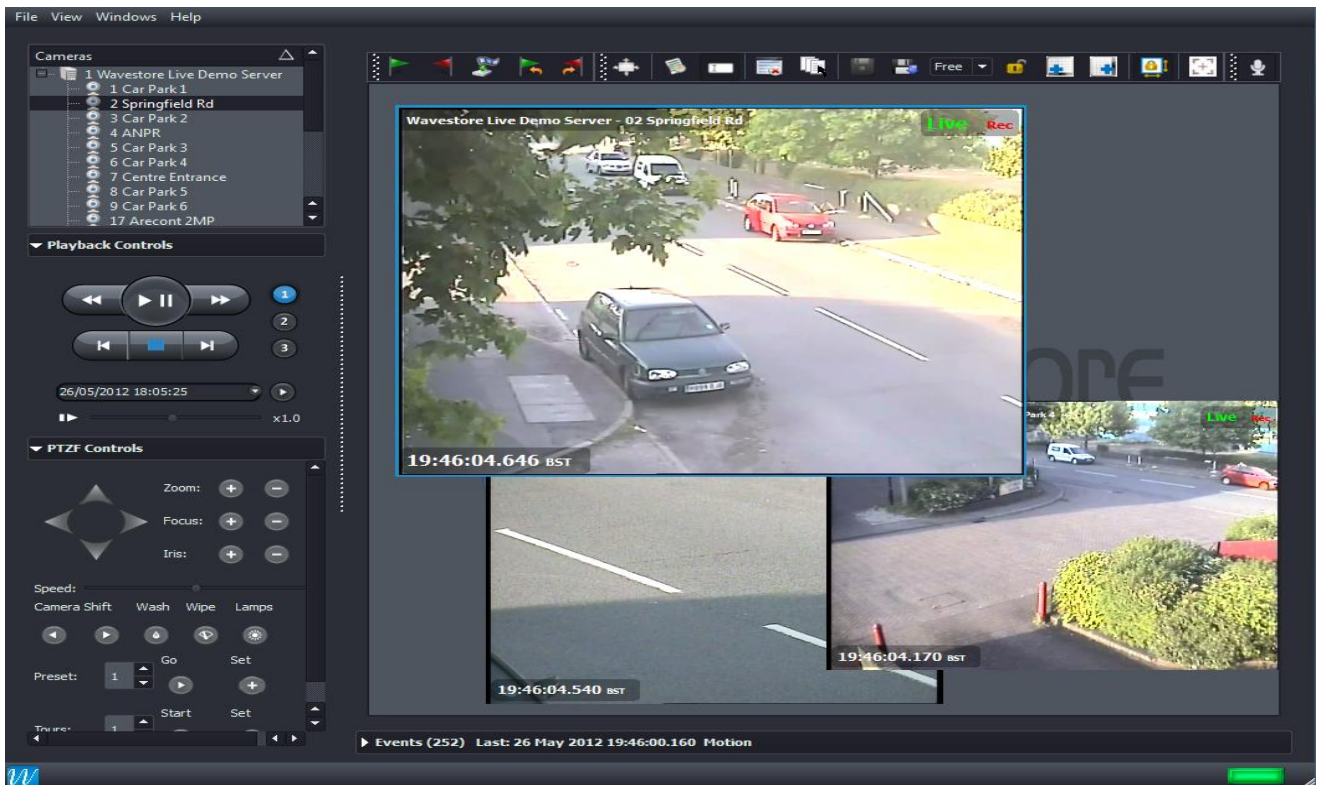


Figure 3.13 Camera 2 Video Display brought to front

3.3 Video Display Area Toolbar



Figure 3.14 Video Display Area Toolbar

The Video Display Area Toolbar controls the configuration of the Video Displays within that area.

The toolbars is split in three sections, each of which can be displayed or hidden (right click on the Toolbar to configure).

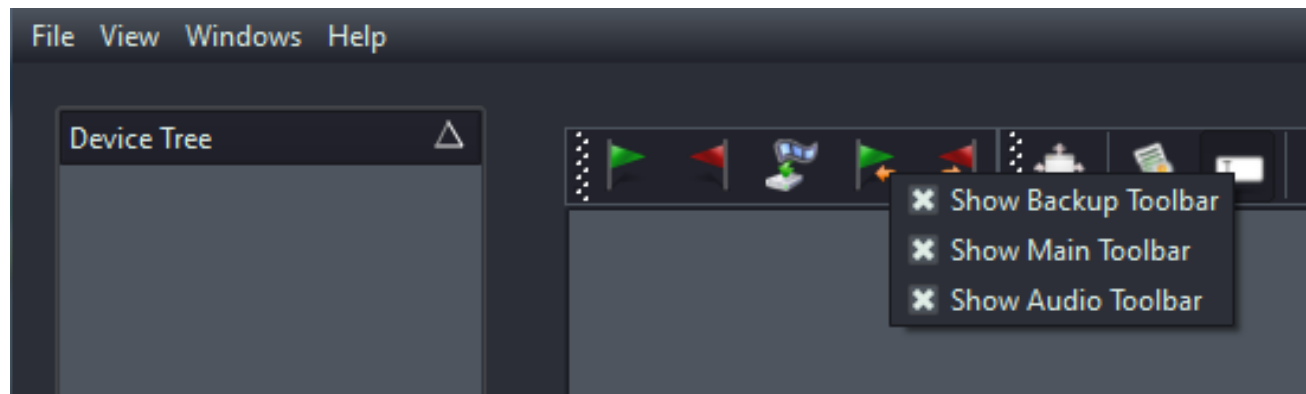


Figure 3.15 Video Display Area Toolbar display menu

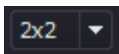
The toolbar icons are as follows:

Backup Toolbar

	Mark 'From Time' for Backup Icon – selects the start time for a quick backup from the Main screen
	Mark 'End Time' for Backup Icon – selects the end time for a quick backup from the Main screen
	Backup Dialog Icon – calls up Backup Dialog Menu
	Go to 'From Time' Icon – moves the current playback position to the selected 'From Time'
	Go to 'End Time' Icon – moves the current playback position to the selected 'End Time'

Main Toolbar

	Full Screen Display Icon - Clicking on this icon removes all menus and toolbars from the screen, and expands the camera view(s) to fill the entire screen.
---	--

	Setup Subtitles Icon - The Setup Subtitles screen allows configuration of the subtitles within all Video Displays of the current Video Display Area. When clicked, a new window appears showing the subtitle template with a variety of 'tags' arranged to reflect the current subtitle settings (e.g. Server/Camera name, time stamp, frame rate etc.). These can then be amended as required.
	Subtitles Icon - Clicking on this icon allows you to toggle the video display subtitles on/off.
	Clear All Displays Icon - The Clear All displays icon removes all cameras from the Video Display Area.
	Select All Icon
	Save Custom Layout Icon - Clicking on the Save Custom View icon allows you to save a configured layout of camera displays with a friendly name (e.g. Car Park Cameras) for quick recall.
	Load Custom Layout Icon – loads a previously saved Custom Layout of Cameras
	Display Configuration Icon - Clicking on this icon allows you to select the configuration of the camera display from the following selections: • <i>Free - Switches the Video Display Area to freely configurable mode</i> • <i>1, 2x2, 3x3, 4x4, 3x2, 4x3, 5x4, 5x3 - Switches to a fixed, preset layout of displays</i> • <i>Custom Layout - Switches to a previously saved custom layout</i>
	Lock Layout – Locks the current position of the video displays
	Adds a row to the current grid layout of video displays
	Adds a column to the current grid layout of video displays
	Locks/Unlocks the aspect ratio of the currently selected video display on/off.
	Toggles Contours & Tracking On/Off for configuration of Dewarped view of Hemispheric Camera stream

Audio Toolbar

	Talkback status icon – displays the status of the Talkback channel from a microphone on the client device, to a speaker on the server or camera. Talkback for any channel is switches on/off by clicking on the Microphone icon on the Video Toolbox (Section 3.6). When talkback is active on any channel, the status will change to Red.
---	---

3.4 Setup Subtitle screen

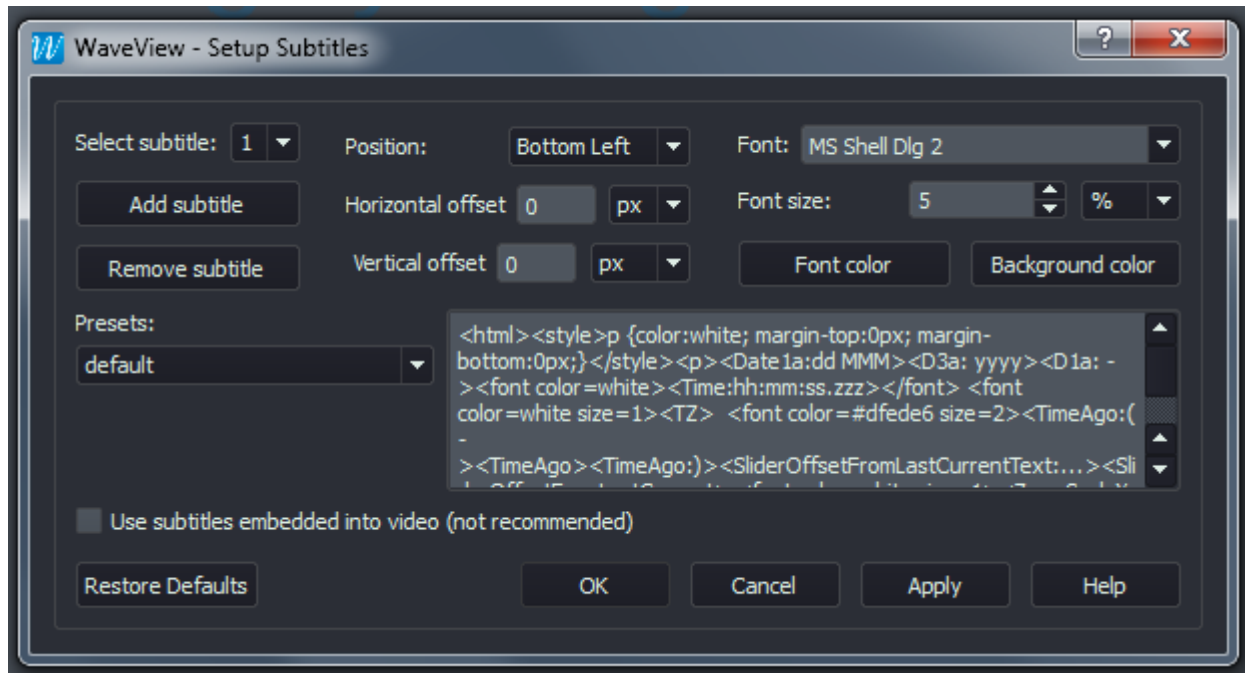


Figure 3.16 Subtitle Setup submenu

The Setup Subtitles menu allows the default subtitles that appear on individual Video Displays to be reconfigured or removed.

This menu contains individual configuration for each of the subtitle positions on the display, such as position, font, size and displayed text.

If you wish to configure a custom subtitle configuration for that position, click in the text box (light grey section), and you can add/remove the sections that you require.

The **Help** button opens a window showing the list of available tags, along with a description of each. You can copy and paste from this window into the text box for each position.

The functions of the remaining menu buttons are as follows:

- The **Restore Defaults** button sets the subtitles to the default settings
- The **OK** button accepts the current setting and closes the Setup Subtitles window
- The **Cancel** button cancels all changes and closes the Setup Subtitles window
- The **Apply** button saves the current setting but keeps the Setup Subtitles window open
- The **Help** button gives a full list of the Subtitle options available

3.5 Video Display Icons and Controls



Figure 3.17 Video Display

A single Video Display shows a single video stream and can play an associated audio stream.

When you position the mouse pointer over the top right corner of the Video Display, the Video Display Toolbox will appear which provides access to various tools and settings for the Video Display.

The Video Display contains areas for subtitles (top and bottom edges), along with Audio Status Icons (lower right) which indicate the current state of the audio stream (if present).

Other Text Information is displayed in the Video Display such as Server Name, Camera Name, Time Stamp, Time Zone, frame rate and file size of the image. The Subtitle Settings control which of these text items are displayed.

3.6 Video Display Toolbox



Figure 3.18 Video Display Toolbox

The Video Display Toolbox shows a number of icons as follows:

	Edit – captures the currently displayed image and displays it in a new window, allowing editing, backup and printout (functions described in Section 7).
	Video Resolution – allows you to change the current ‘requested’ viewing resolution (Low/Medium/High) to improve the image rate on a slow network connection.
	Create Annotation - Video Footage can be marked with an annotation note, so that it can be easily located at a future date (see section 5.12).
	Clone Video Display ; a new Video Display, time synchronised to the original display, will open in the Video Display Area, a useful feature when viewing different saved views from a 360° camera.
	TalkBack icon – click to toggle on/off (if TalkBack has been configured for this camera channel). The icon colour changes to Red when TalkBack is active.
	Close – closes the Video Display

3.7 Audio Status Icons

The Video Status Icons indicate the state or features of the current video stream. Available icons are:

	Audio Available Icon - If this icon is present, an audio channel is associated with this video channel. The audio can be heard if this Video Display is set to Audio Master. Hovering your mouse pointer over the Audio Available Icon will cause additional icons to display as follows:
	Audio Mute - Mutes audio from this channel
	Audio Enable - Enables the audio from this channel.



- **Solo Audio** - Mutes any other audio streams already playing, so only this channel may be heard.

3.8 Device Tree

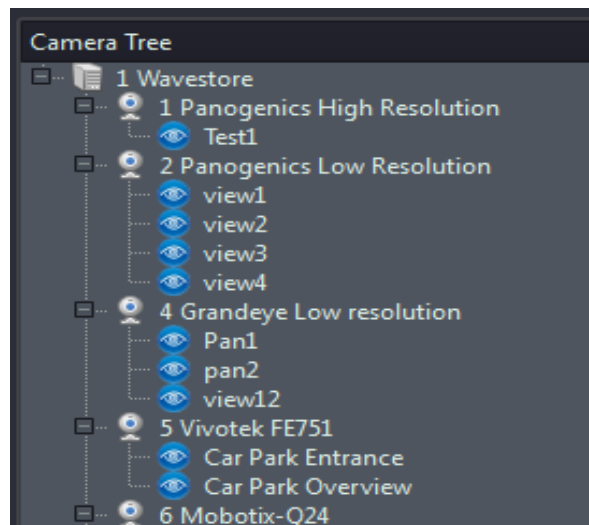


Figure 3.19 Device Tree

The Device Tree displays the currently connected Wavestore Servers, with individual Audio and Video Channels listed beneath. Virtual Camera views from hemispheric cameras are shown as blue icons.

Double-clicking on a Camera or View causes that video from that camera to be displayed in the Video Display Area.

If the Video Display Area is completely filled with other cameras, the active Video Display (blue outline) is switched to the newly selected channel. Otherwise a new Video Display (containing the new Channel) is added to the existing Video Displays.

3.9 PTZF Controls

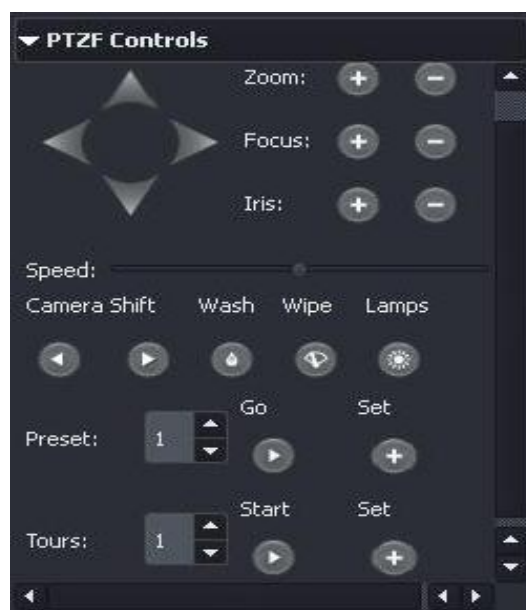


Figure 3.20 PTZ Controls

The PTZF Controls Panel allows control of Pan/Tilt/Zoom cameras. These controls will be disabled if:

- *The active camera is not a PTZ camera*
- *The user does not have permission to control PTZ on this camera*

Available controls are:

- *Pan left/right*
- *Tilt up/down*
- *Zoom in/out*
- *Focus in/out*
- *Iris open/close*
- *Wash*
- *Wipe*
- *Lamp toggle*
- *Shift left/right - for rail mounted cameras*
- *Go to a Preset Position*
- *Start a Tour*

3.10 Working with Virtual Camera Views from Hemispheric Cameras

Virtual Camera views can be called up in the normal way by clicking on the name of the view in the Device Tree:

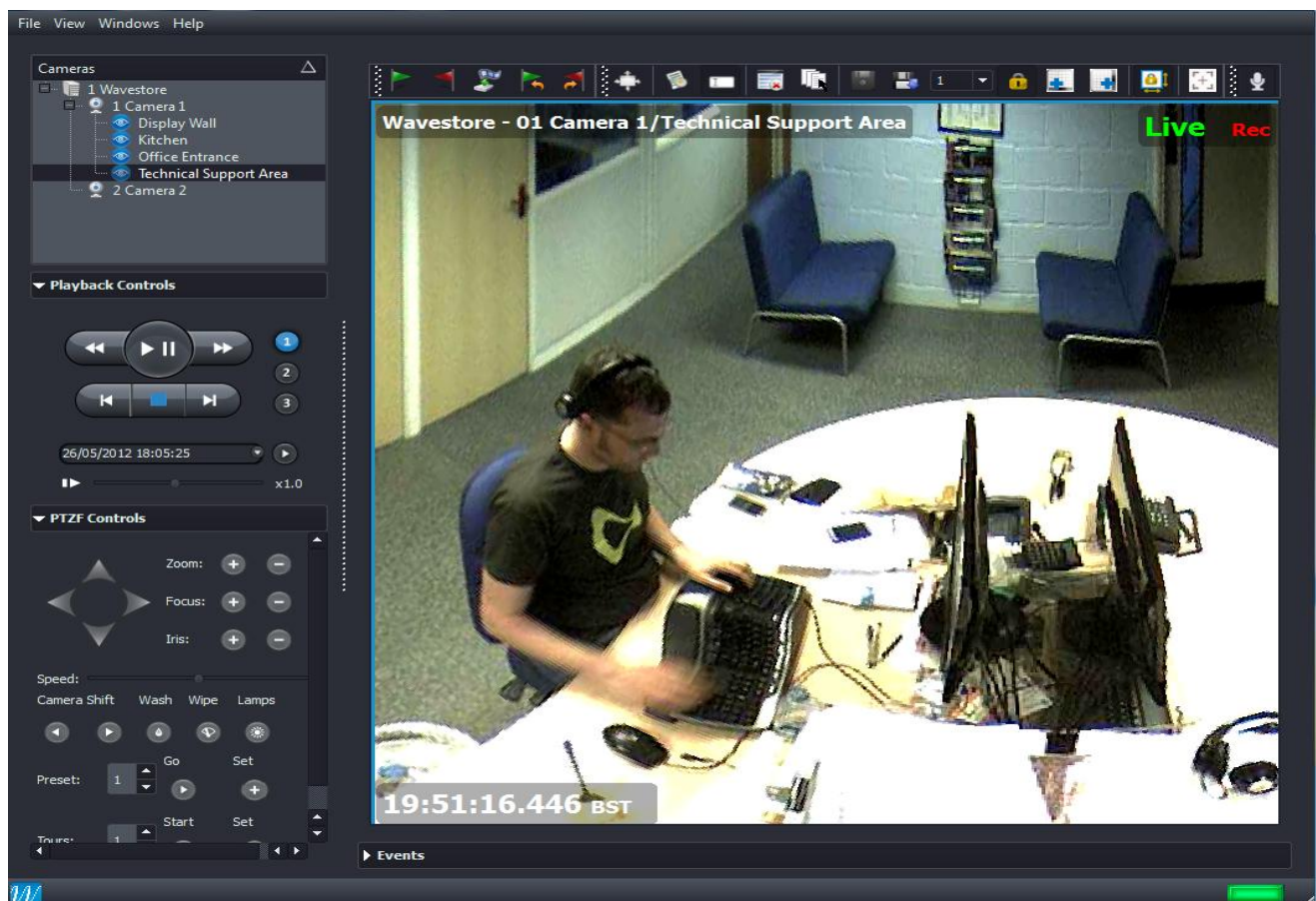


Figure 3.21 Live Virtual Camera View from Hemispheric Camera

You can view a different area of the original warped stream from the camera (either in Live View or Playback) by using left click and drag on your mouse, or rolling your mouse wheel to zoom in/out:

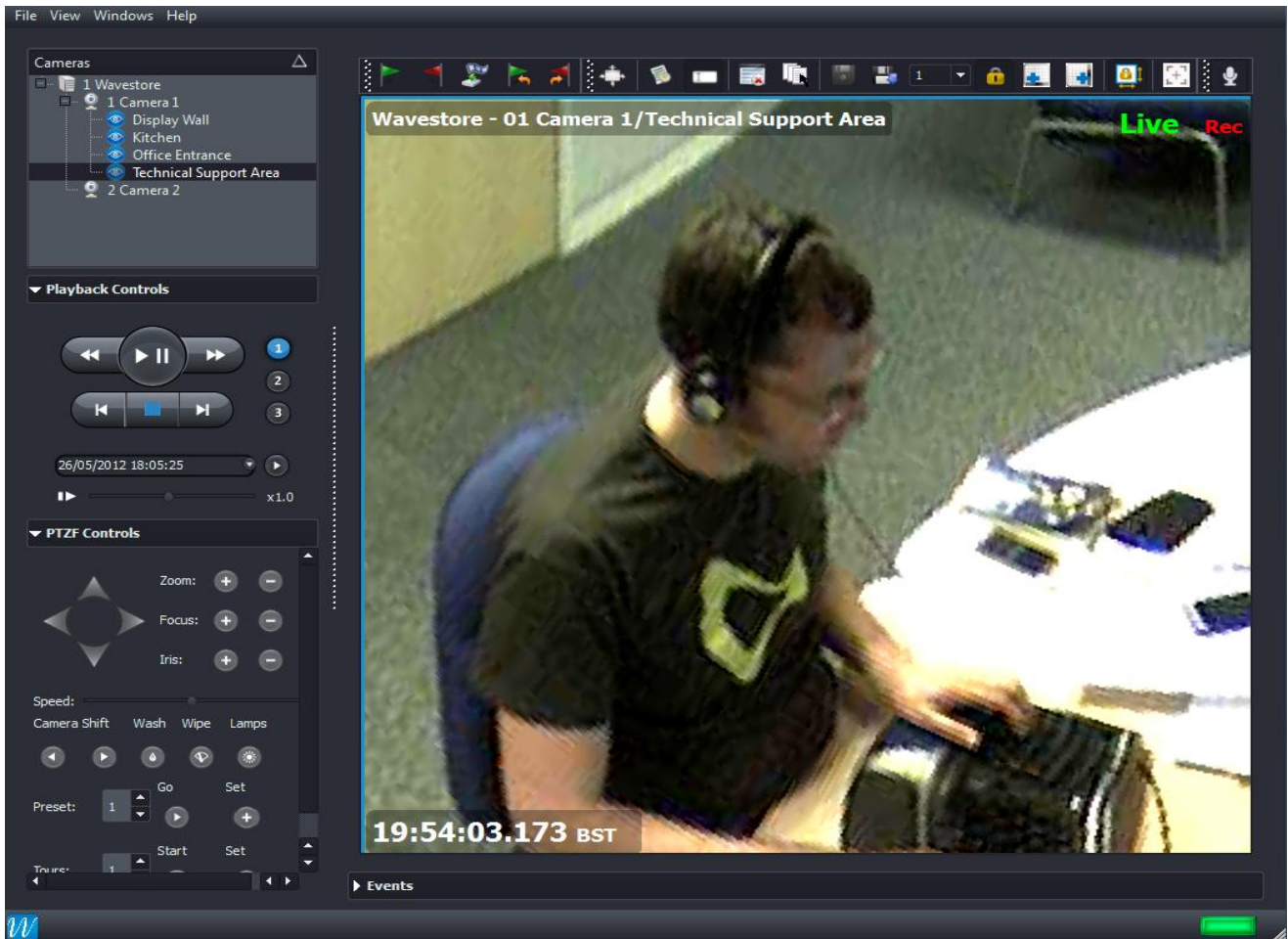


Figure 3.22 Using Zoom function on Live Virtual Camera View to view specific area

This function is useful if you are tracking a moving person or object, and can be used with the Quick Backup function (Section 6) to produce a backup file showing your exact tracking movements.

Section 4 Quick Search & Playback using Live Screen

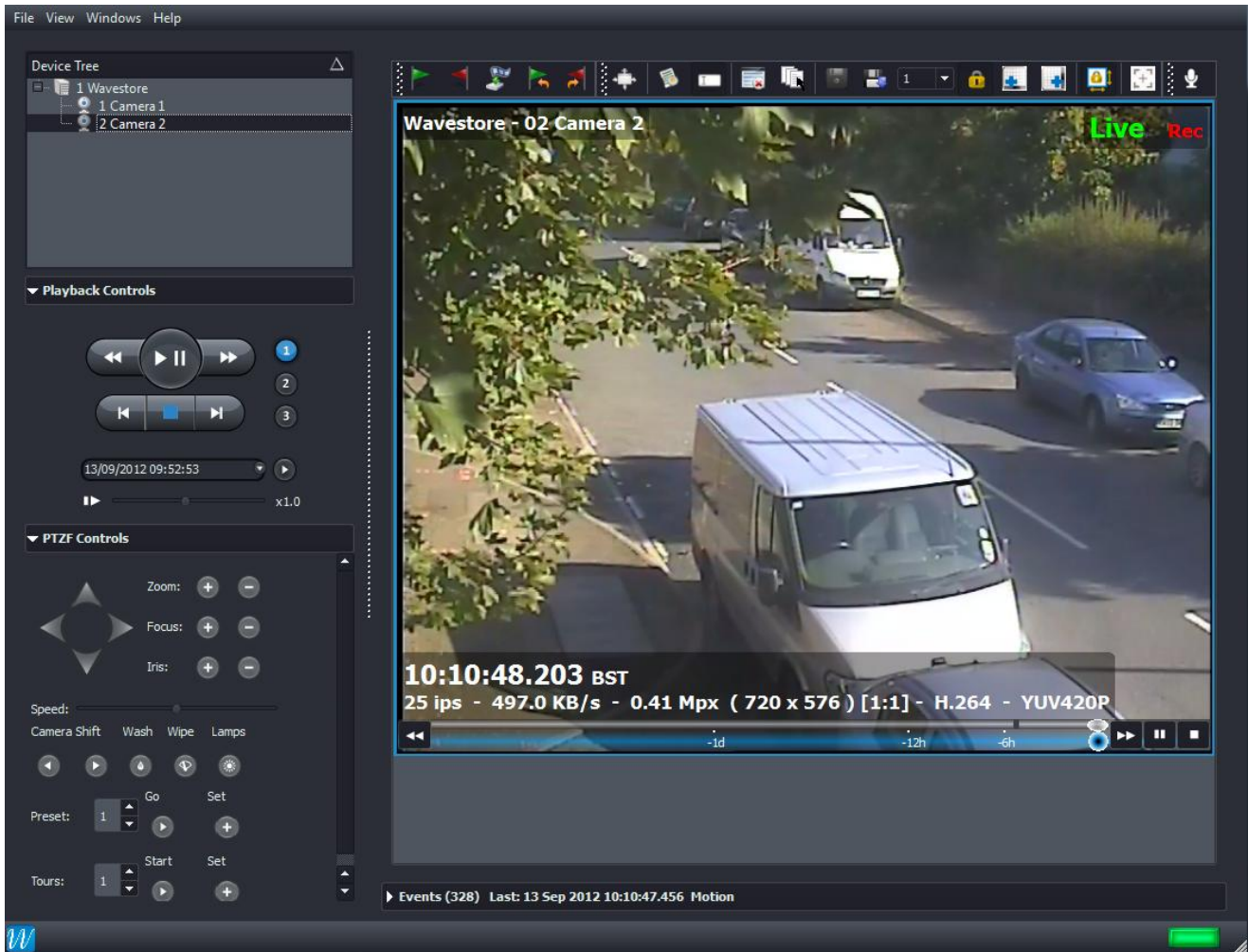


Figure 4.1 Quick Search Playback Controls

If you move the mouse pointer over the lower edge of an individual camera view, a quick search time slider with playback controls appears as shown above, along with playback controls.

The time slider is split into two parts (grey and blue).

The upper part of the time slider (grey) is linear, and displays the current position on the recorded track (oldest footage at the left, most recent footage on the right). The grey bar will contain gaps for any periods when the channel was not recorded by the server (e.g. a channel configured for Motion Detect recording).

The lower part of the time slider (blue) is non-linear (close to logarithmic), and is incremented in days/hours/minutes. This bar gives a user the ability to perform a detailed search around a particular section of the recorded footage.

The quick search playback control buttons (either end of the time slider) allow you to pause or resume playback, frame step forward/backward (quick click), and also fast forward and rewind (click and hold).

Clicking and dragging on the grey slider gives the coarse control of the current position on the recorded track.

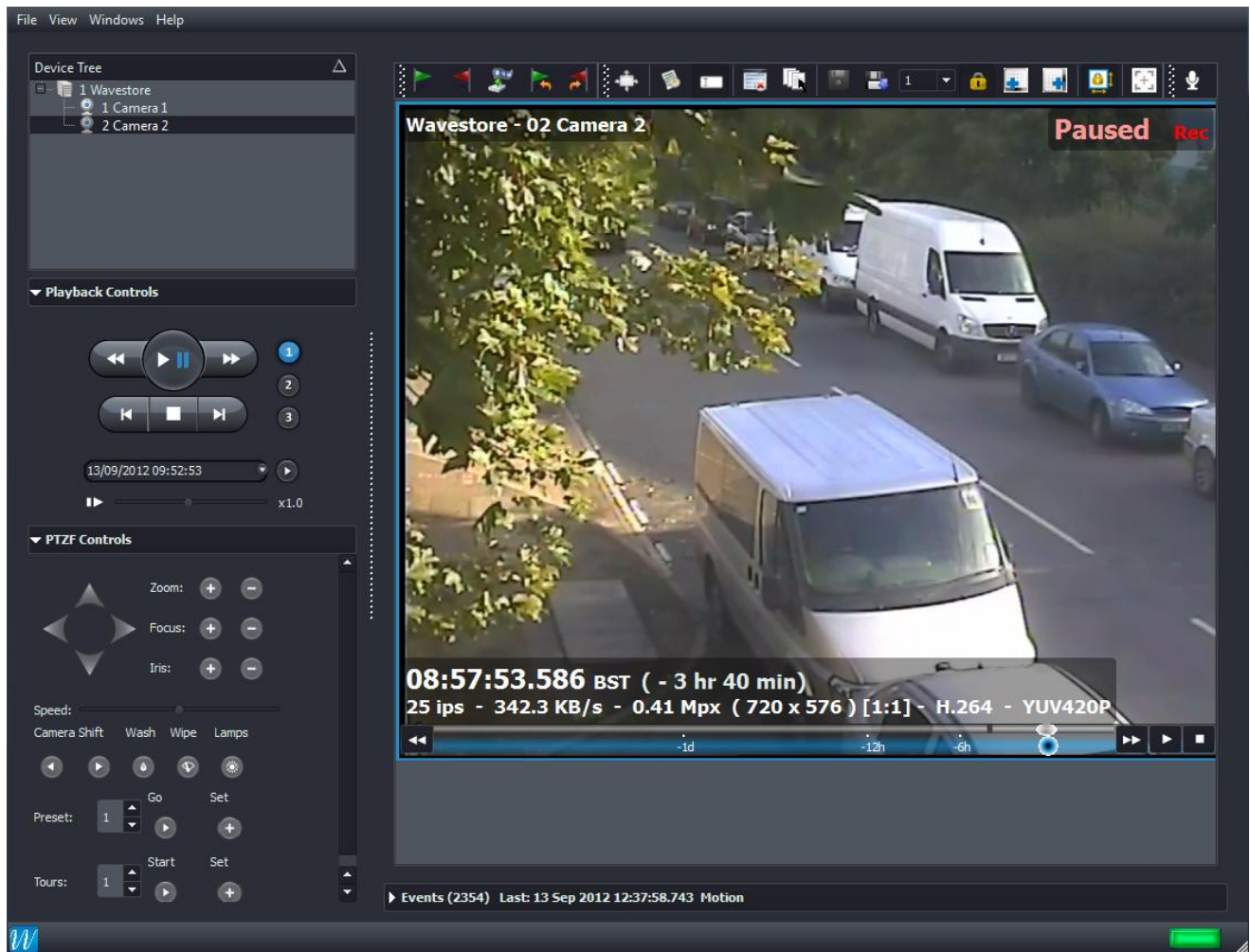


Figure 4.2 Searching using Grey Time Slider bar

To carry out a more detailed search, hover your mouse pointer over the blue time slider, and roll the mouse wheel forward.

Rolling the mouse wheel forward/backward will zoom in/out on the time period; as you do this, the scale of the time increments will change, as below:

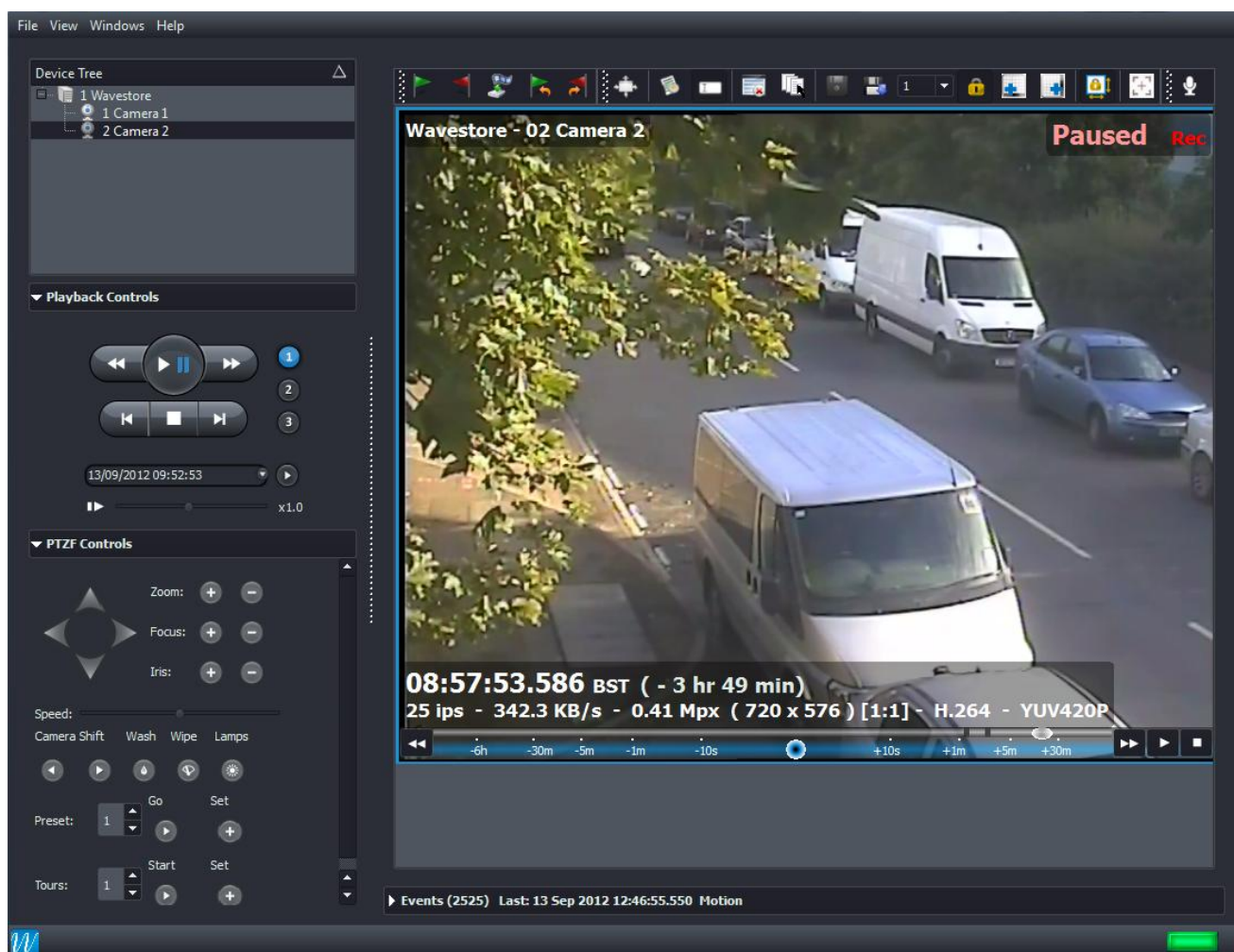


Figure 4.3 Time Increments on Blue Time Slider bar changed by rolling mouse wheel

Clicking on a point on the blue line either side of the slider moves the current playback position to that point in time. The grey oval slider on the upper slide bar shows the current playback position, in relation to the complete timeline of the footage held on the server.

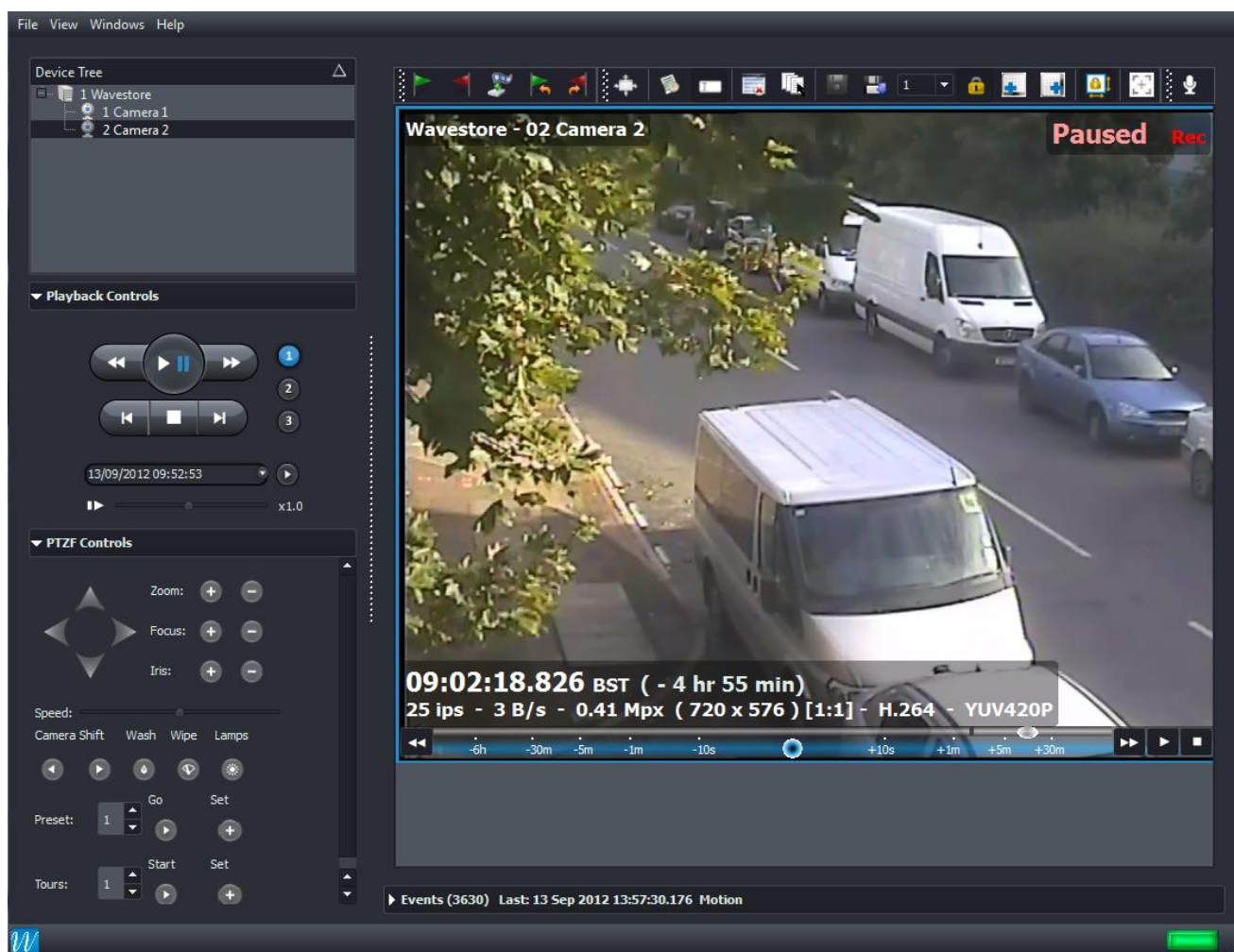


Figure 4.4 Time of display moved forward four minutes by clicking on Blue Time Slider bar

If you wish to look at footage from another camera at the same point in time, you may need to first reconfigure your display type (e.g. from a single camera display).

You can do this by using the drop down menu on the Video Display Area Toolbar:

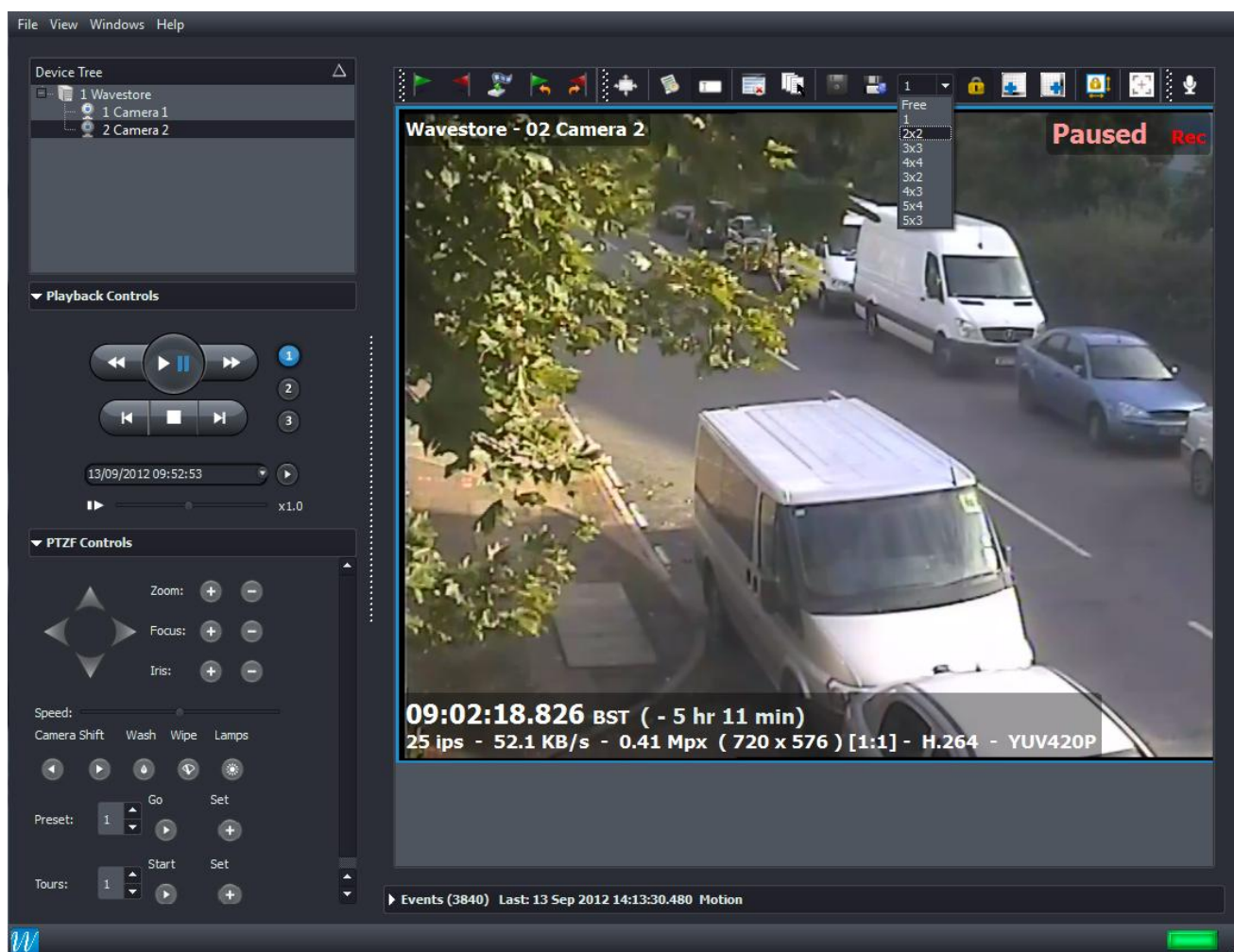


Figure 4.5 Changing display configuration using drop down list

Alternatively you can click on either the 'Add Row to Grid layout' or 'Add Column to Grid Layout' buttons on the Video Display Toolbar:

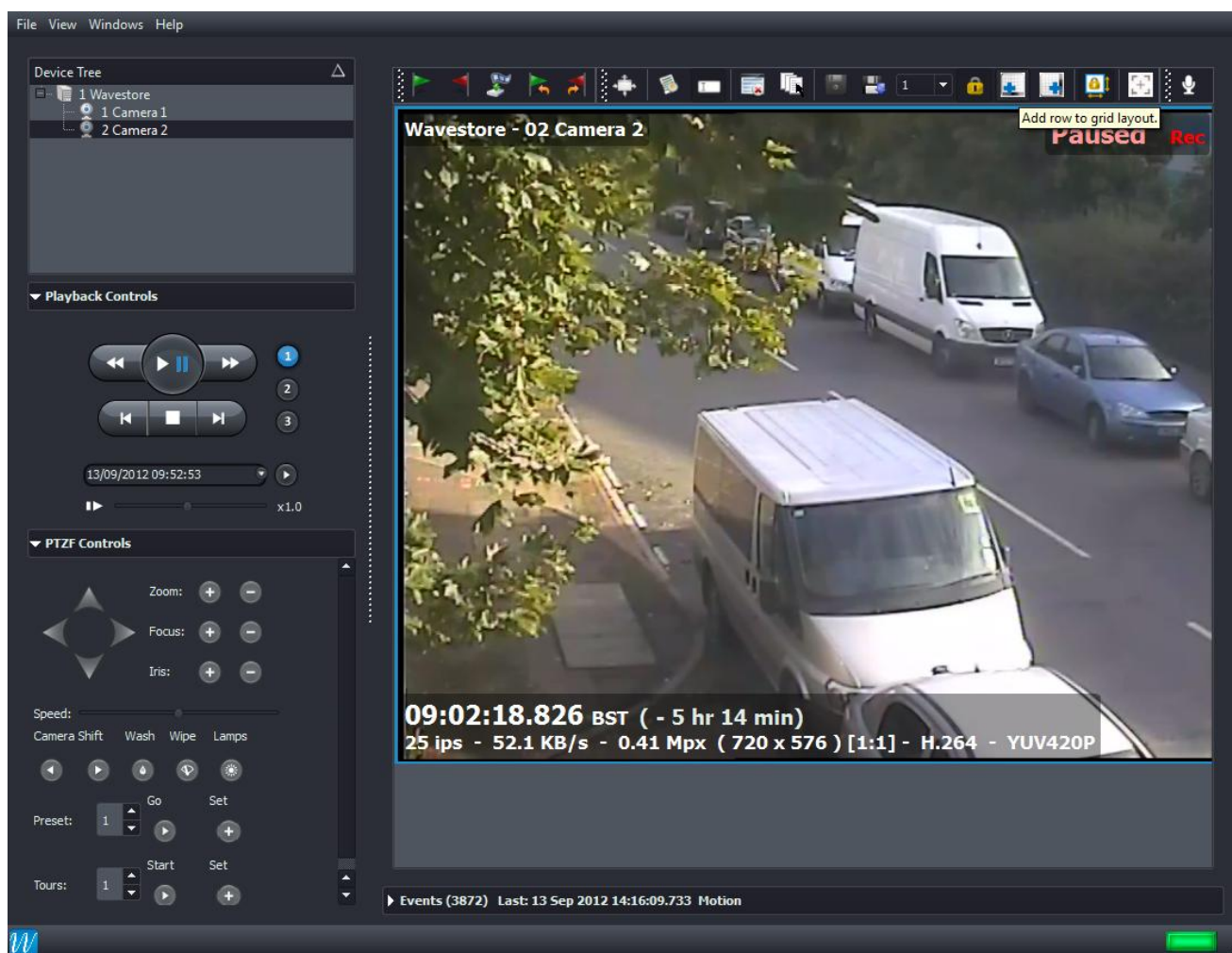


Figure 4.6 Changing display configuration using 'Add Row to Grid Layout' button

The Video Display configuration will now change:

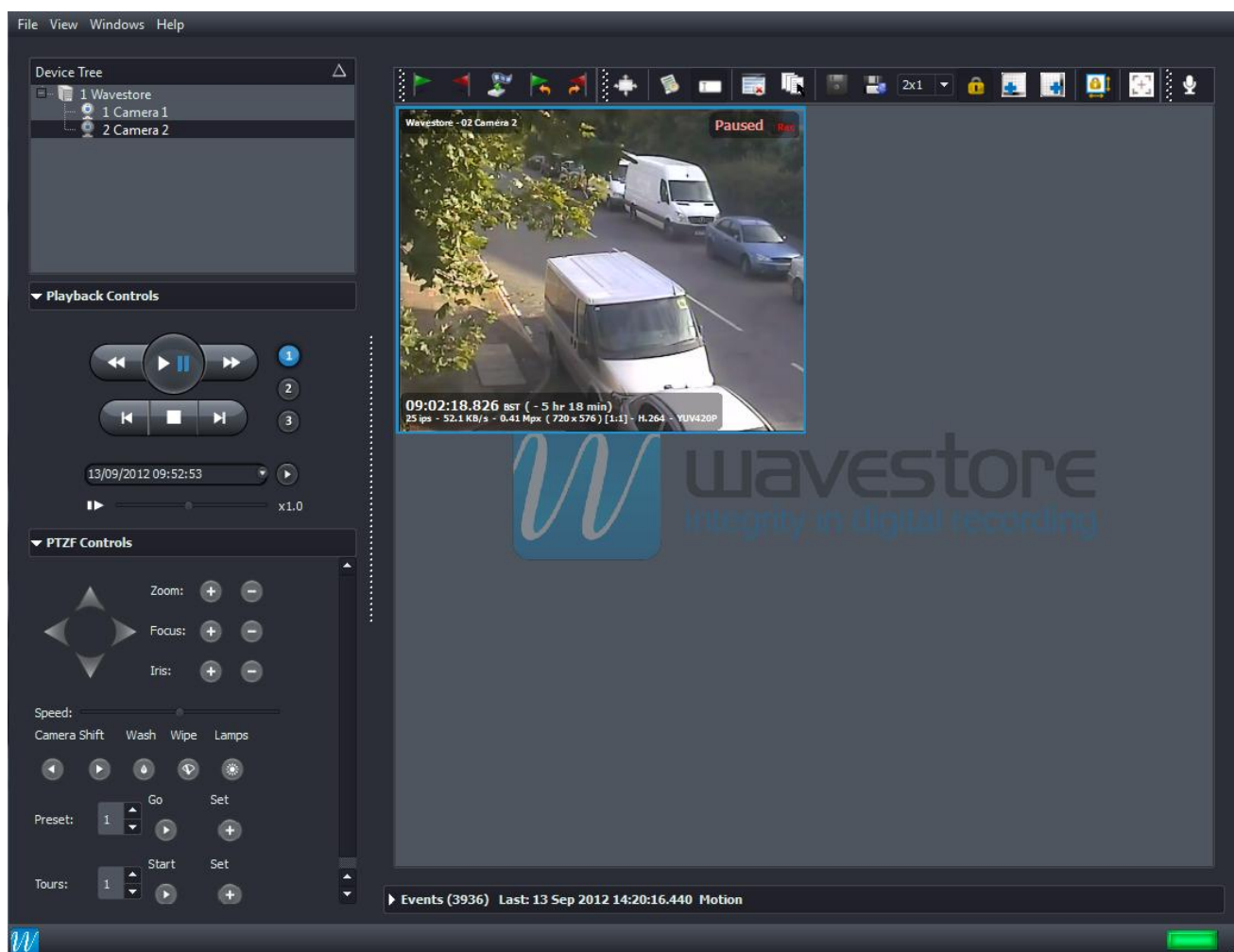


Figure 4.7 New Display Configuration

To add the additional video display, first check that your current Video Display is selected so that the frame is highlighted blue (click within the Video Display if not).

Next, hold down the Shift key, and click on the name of the camera in the Device Tree that you want to add to the display.

The new camera will now be added to the display:

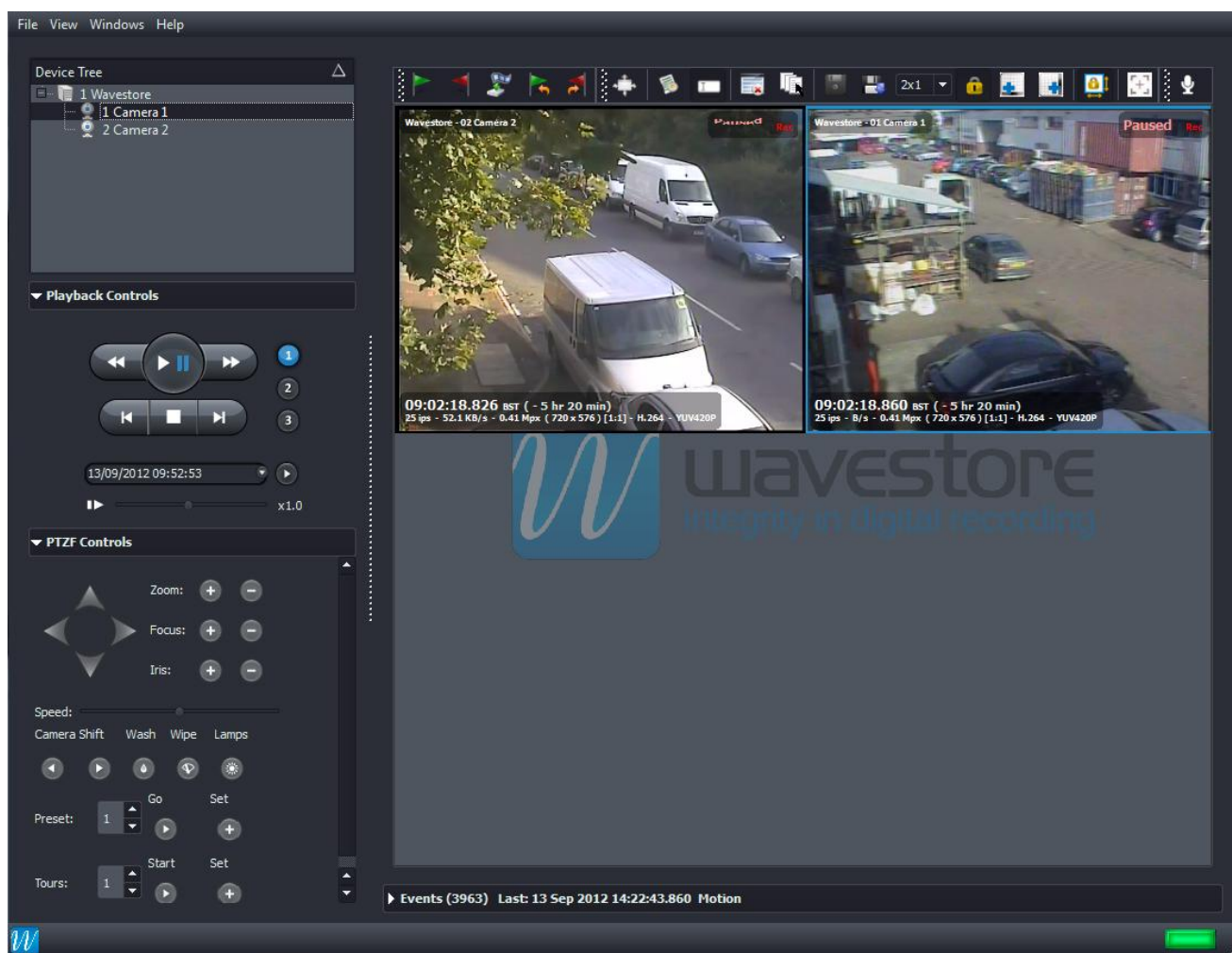


Figure 4.8 Camera 1 added to display (in Playback Mode), paused at same time as Camera 2

To return a Video Display to Live View, just click on the Stop icon within that display.

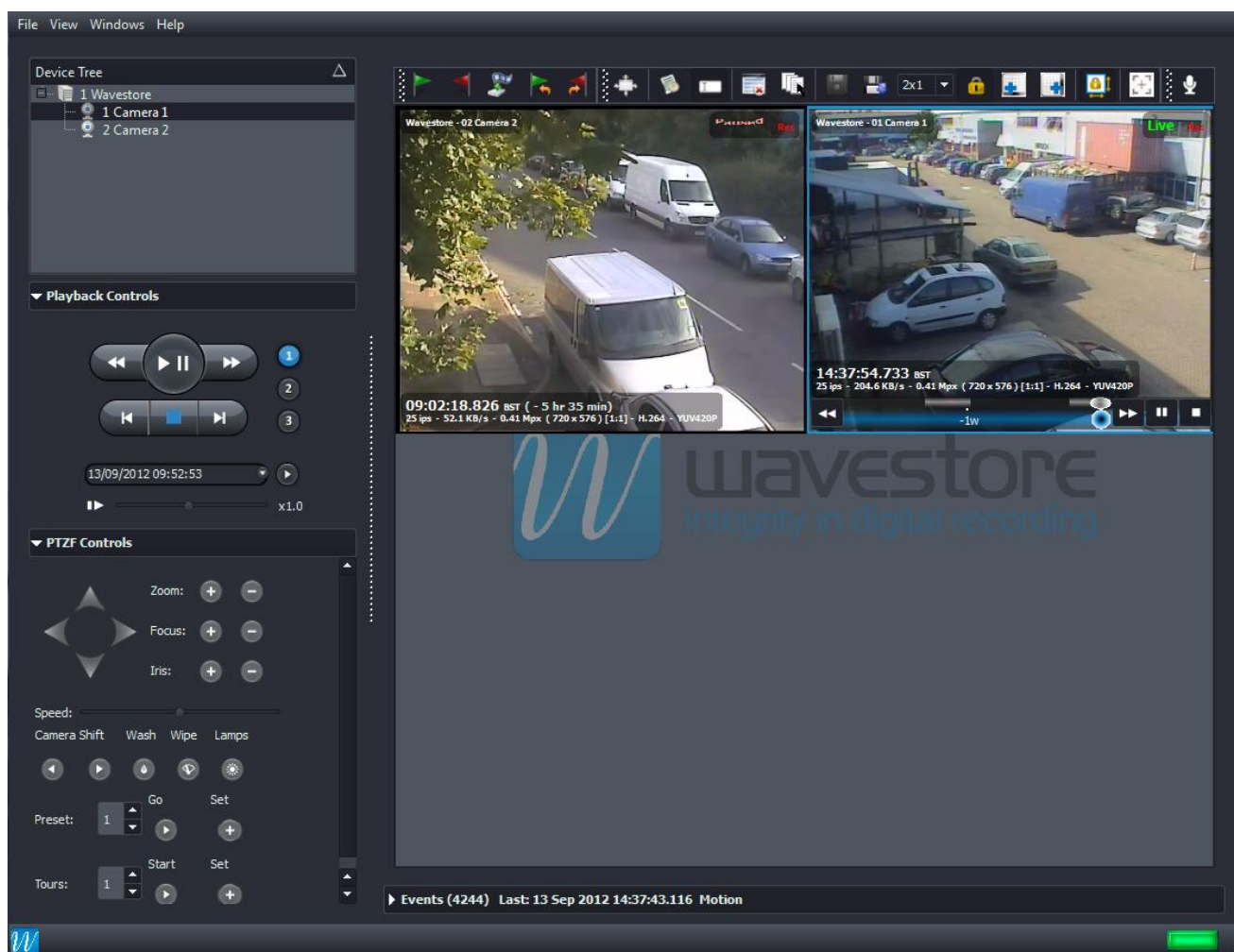


Figure 4.9 Camera 2 paused in Playback mode, Camera 1 in Live View mode

Section 5 Search & Playback using Find Screen

5.1 Overview

The Find screen (menu path *Windows -> Find*) allows you to carry out a detailed search of footage stored on the server.

This screen displays a searchable timeline of recorded audio/video, for all recording tracks for each channel.

The Find screen allows easy navigation within the archived video, exporting of video in multiple formats, and an annotation facility for sections of video footage.

The screen is similar to the main screen Video Display Area used for Live View, but all Video Displays are time synchronized and playback of a single Video Display cannot be controlled independently.

The Find screen contains of the following items:

- *Video Display Area (grey area marked with Wavestore logo)*
- *Horizontal Timeline Bars (marked in purple, one for each Channel)*
- *Pull Down Menu Bars*
- *Archive Range section*
- *Selection Range section for Backup*
- *Current Time Indicator (position of vertical black marker on time bars)*
- *Playback Controls*
- *Video Display Toolbar*

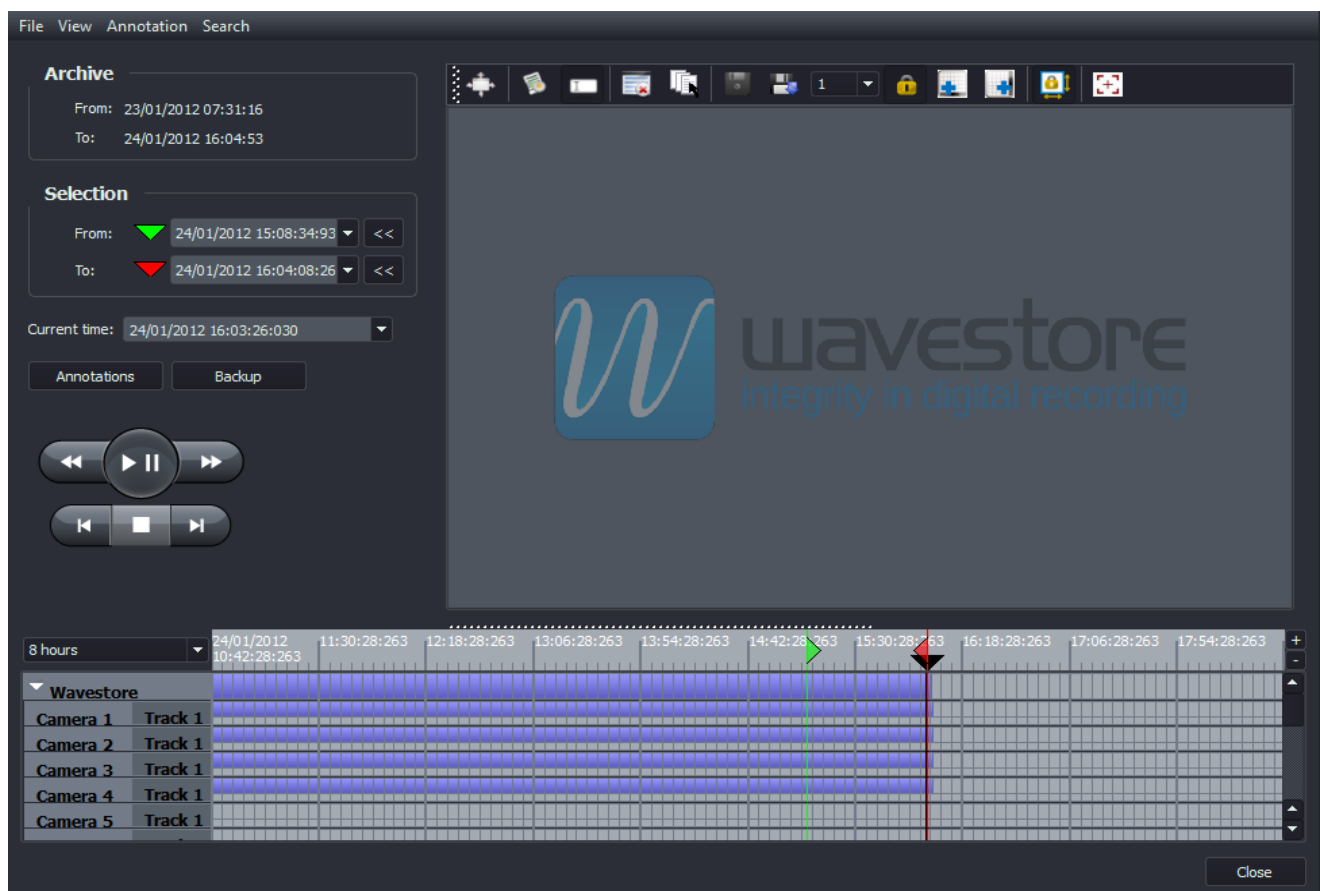


Figure 5.1 Find Video Display Area

5.1 File Menu

- *Close* - Closes the Find Screen

5.2 View Menu

- *Track 1* - Toggles whether Track 1 is shown in the time line (default setting - On)
- *Track 2* - Toggles whether Track 2 is shown in the time line
- *Track 3* - Toggles whether Track 3 is shown in the time line
- *Show Time Grid* - Toggles whether a grid is shown under the time line
- *Show Annotations* - Toggles whether the yellow annotation bar is displayed, beneath each camera channel timeline

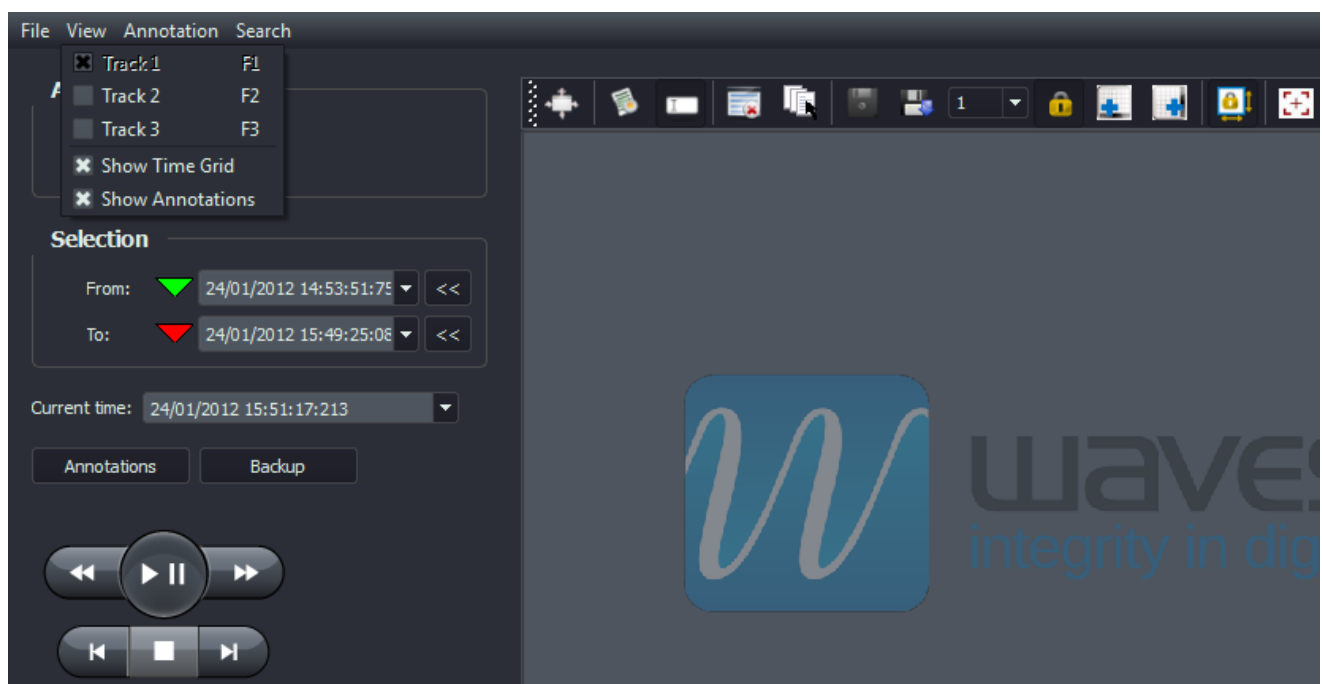


Figure 5.2 Archive Range

5.3 Annotation Menu

- *New* - Opens the Create Annotation window
- *Edit* - Opens the Annotation Edit window

5.4 Search Menu

- *Events* - Opens the Event Search window (optional licensed upgrade module)

5.5 Archive Range

The archive range displays the time/date range of the footage currently stored on the server.

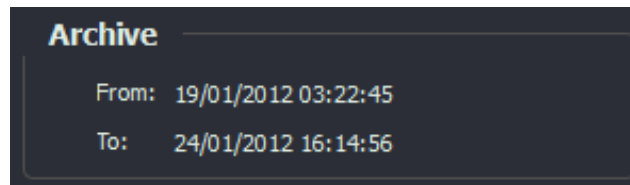


Figure 5.3 Archive Range

5.6 Selection Range

The selection range displays the footage currently selected for backup (Section 6).

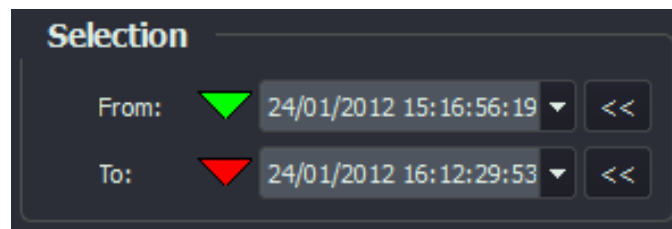


Figure 5.4 Selection Range

Alternatively we can click and drag the Green and Red markers on the Time Line, to set the 'From' and 'To' times.

5.7 Playback Controls

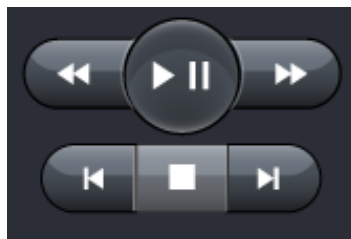


Figure 5.5 Playback Controls

The playback controls operate as follows:

- **Play/Pause** Starts/pauses playback of the stream
- **Rewind/Frame Step Back** A single left-click steps back a single frame. Holding the left mouse button causes Rewind to start; the speed of Rewind increases the longer the mouse button is depressed.
- **Fast Fwd/Frame Step Fwd** A single left-click steps back a single frame. Holding the left mouse button causes Fast Forward to start. The speed of Fast Forward increases the longer the mouse button is depressed.
- **Beginning of Archive** Jumps to the oldest recording on the currently Camera and Track
- **Stop** Return to Live View
- **End of Archive** Jumps to the latest recording on the current Camera/Track
- **Go to field** Allows you to access a specific point in time by directly entering Date and Time
- **Playback Speed sidebar** Click and drag the slide bar to choose playback between 0.1 -> 2x real Time
- **Track Selection buttons 1/2/3** Allows you to select a recording track for the selected video displays. After selecting a track, all playback operations described above will affect this track only

5.8 Current Time Indicator

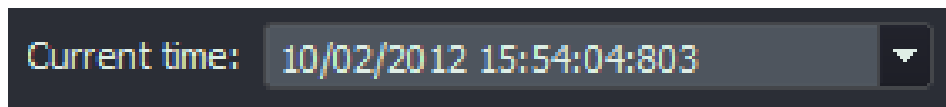


Figure 5.6 Current Time Indicator

The current time indicator displays the current master time for all Video Displays in the Video Display Area.

When a new time is selected (click to highlight the text you want to change, and then type the new time/date), all Video Displays will move to the new time that has been set.

5.9 Selecting Camera for Search/Playback

When the Find screen is first opened, no camera views are displayed.

To select a display configuration or a custom view, right click on the Video Display Area to call up the Context Menu

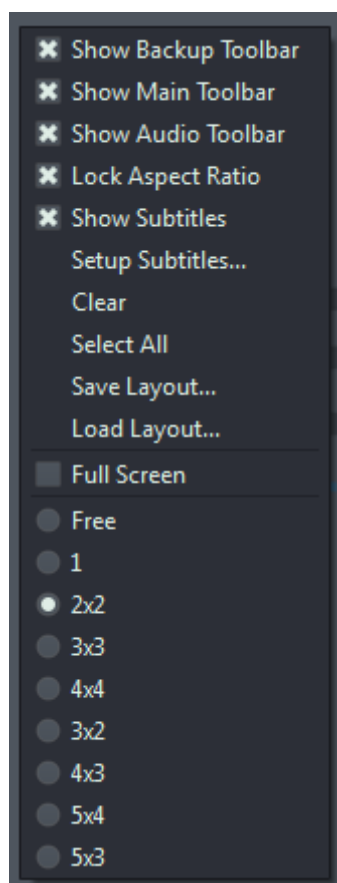


Figure 5.7 Context Menu

The Context Menu has the following options:

- **Camera View Configuration**
- *Show Backup Toolbar toggle option*
- *Show Main Toolbar toggle option*

- *Show Audio Toolbar toggle option*
- *Lock Aspect Ratio - Causes all Video Displays to be fixed to their true height and width*
- *Show Subtitles – Toggles Video Display subtitles on/off*
- *Setup Subtitles - Opens the Setup Subtitles screen*
- *Clear - Removes all Video Displays from the Video Display Area*
- *Select All - Selects all Video Displays within the Video Display Area*
- *Save Layout - Saves the current layout (you can choose a name for the layout, e.g. Car Park cameras)*
- *Load Layout - Switches to a previously saved layout (e.g. Car Park Cameras)*
- *Full Screen - Expands the Video Display Area to full screen display (to exit from full screen display, right click to call up the Context Menu once again, and toggle the Full Screen option OFF)*
- **Camera View Selection**
 - *Free – You may add views from as many cameras as you wish*
 - *1, 2x2, 3x3, 4x4, 3x2, 4x3, 5x4, 5x3 - Switches to a fixed, preset layout of displays*

Double-clicking on the timeline of a Camera Channel will cause the associated Channel to be displayed in the Video Display Area, as shown for Camera 12 below.

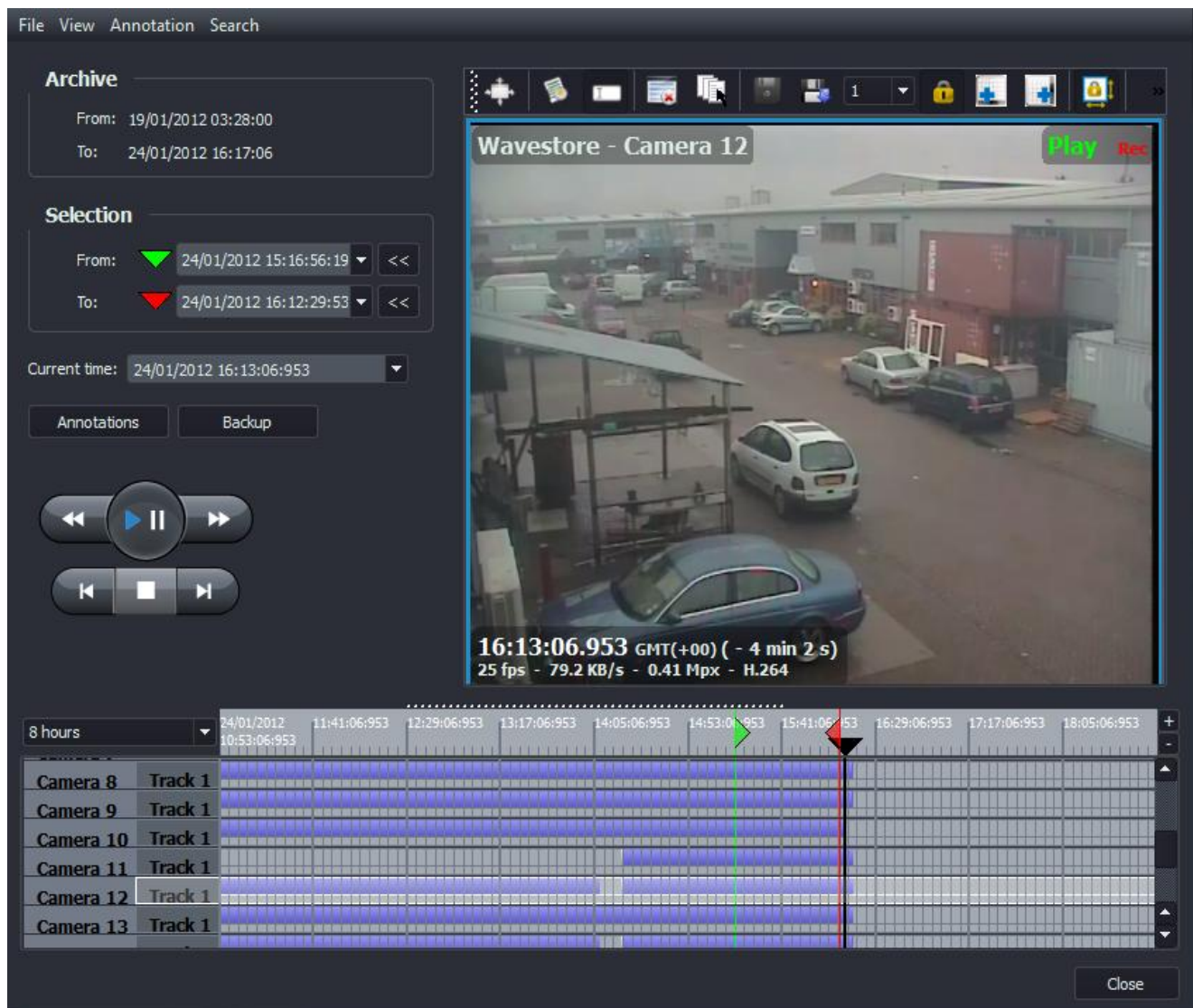


Figure 5.8 Camera Channel displayed in Find screen

When you click on a Camera Channel timeline, if the Video Display is currently viewing one Video Display, the Video Display is switched to the newly selected channel.

If you want to view more than one channel, select the display configuration (2x2, 3x3, 4x4, 3x2, 4x3, 5x4, 5x3) you want from the pull down menu:



Figure 5.9 Camera Channel displayed in Find screen

To add another Camera, double click on the Channel timeline, and the new Channel is added to the Video Display Area.

5.10 Using the Time Line to Search

The time line is displayed horizontally, with oldest recordings to the left.

The black vertical marker indicates the current point in time for playback. The green and red markers are used to select footage for Backup (Section 6)

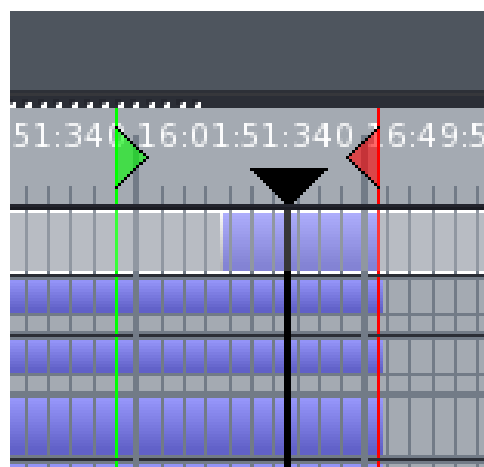


Figure 5.10 Time Line Markers

Gaps in the time line indicate that no recordings are present for that time period (e.g. a camera recording on Motion Detect)

Searching on the time line can be carried out as follows:

- *Left-click and drag the horizontal bars to change the current time position, and display the relevant video in the Video Displays*

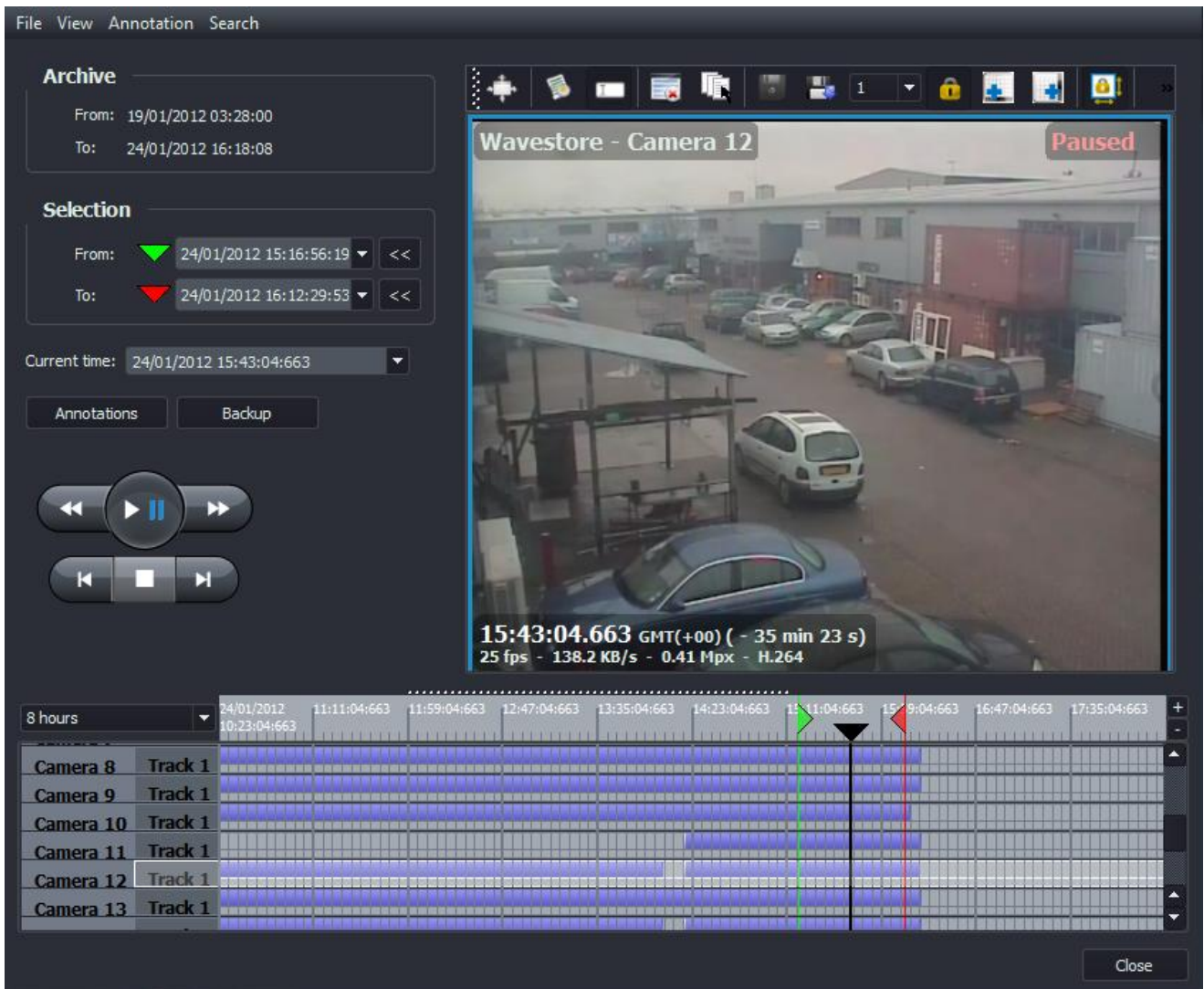


Figure 5.11 Clicking and Dragging Camera Channel on Timeline

- *Hover the mouse over one of the horizontal bars to see the precise time at that point in the recordings*

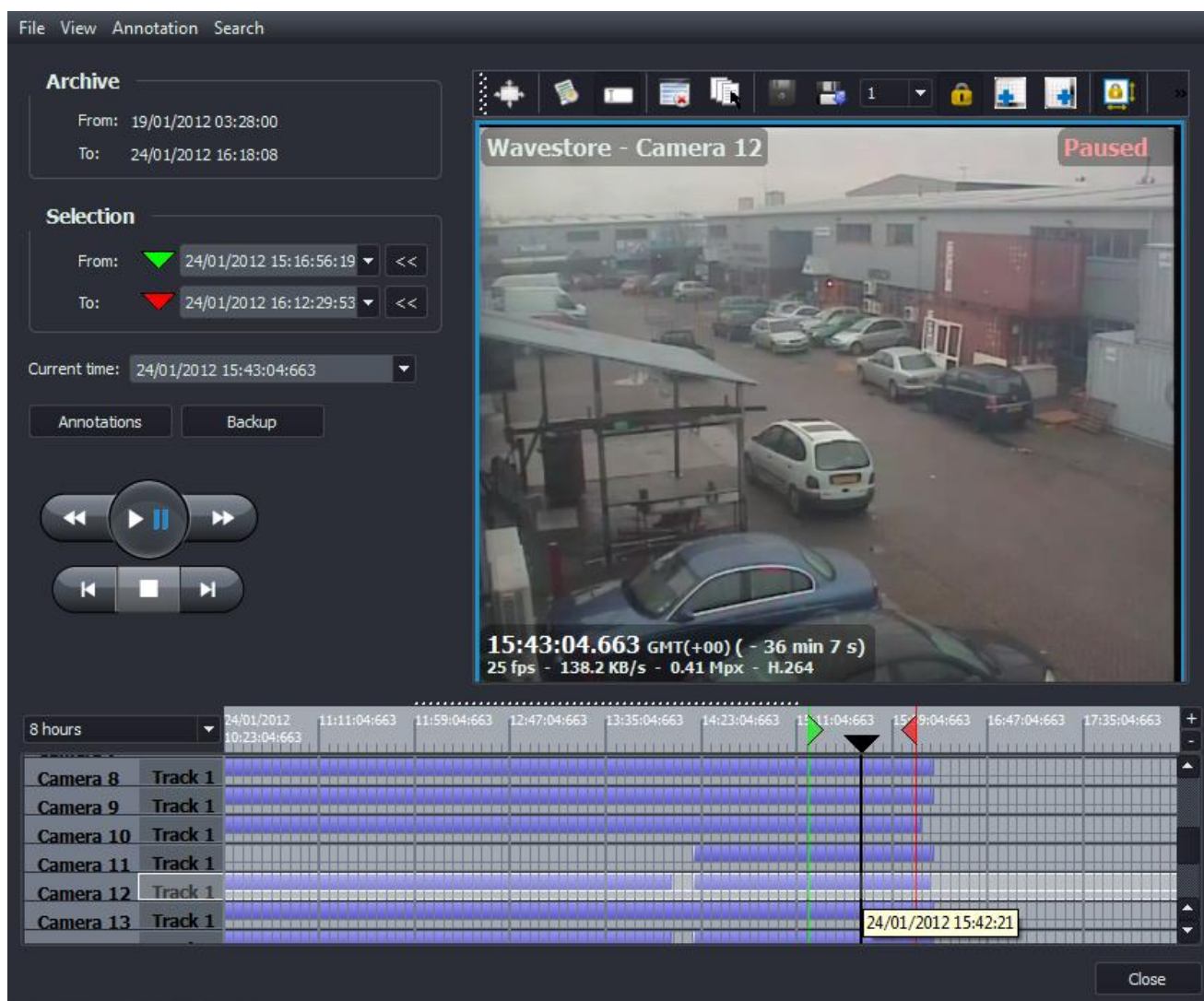


Figure 5.12 Time Display on Camera Channel Timeline

- Click the 'span' drop-down box in the lower left corner to change the size of the timeline view; this allows a timeline of varying durations (from 2 minutes up to 60 days) to be displayed. This can be useful to zoom in on a period of time for detailed searching.

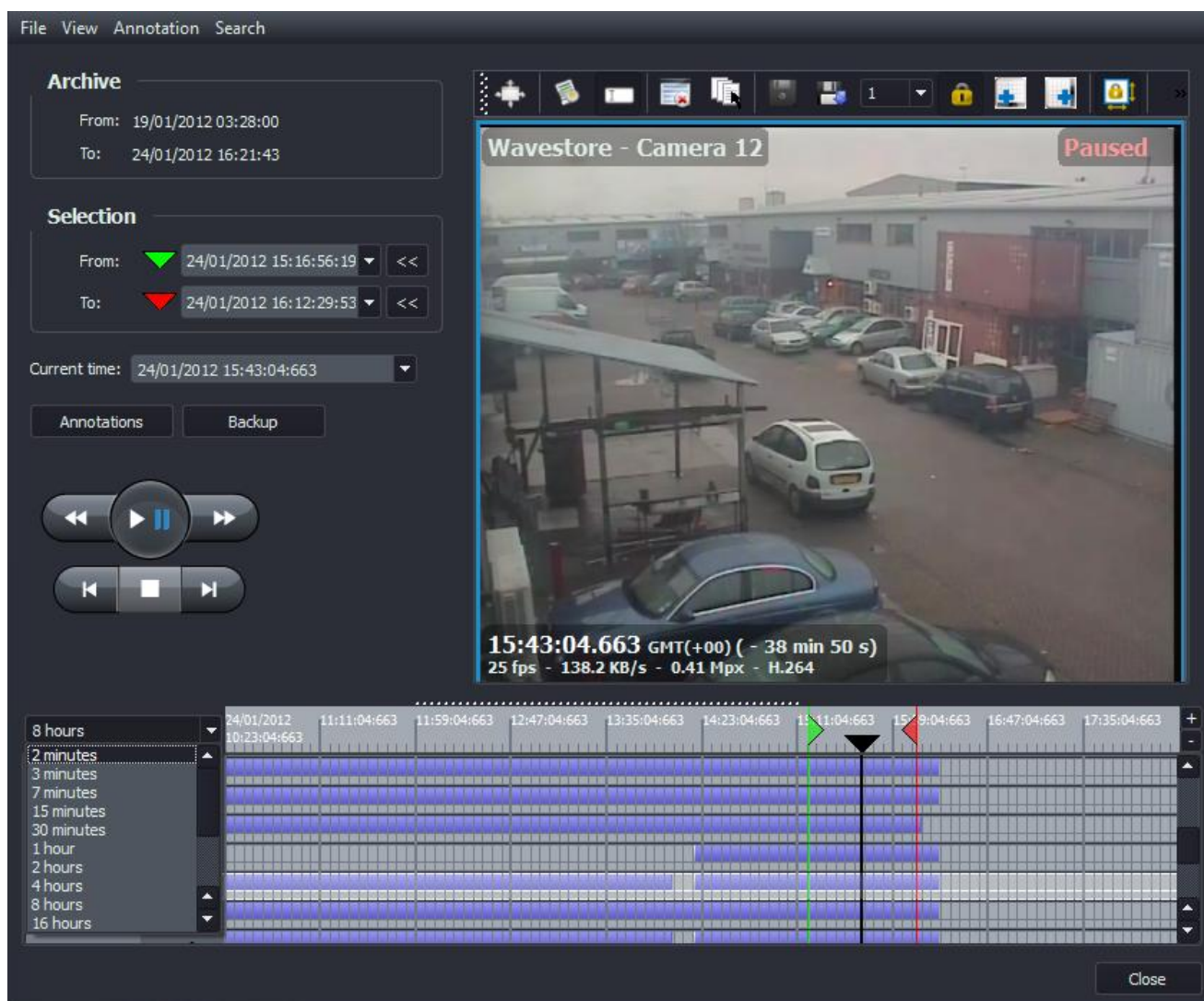


Figure 5.13 Find Screen Time Span menu

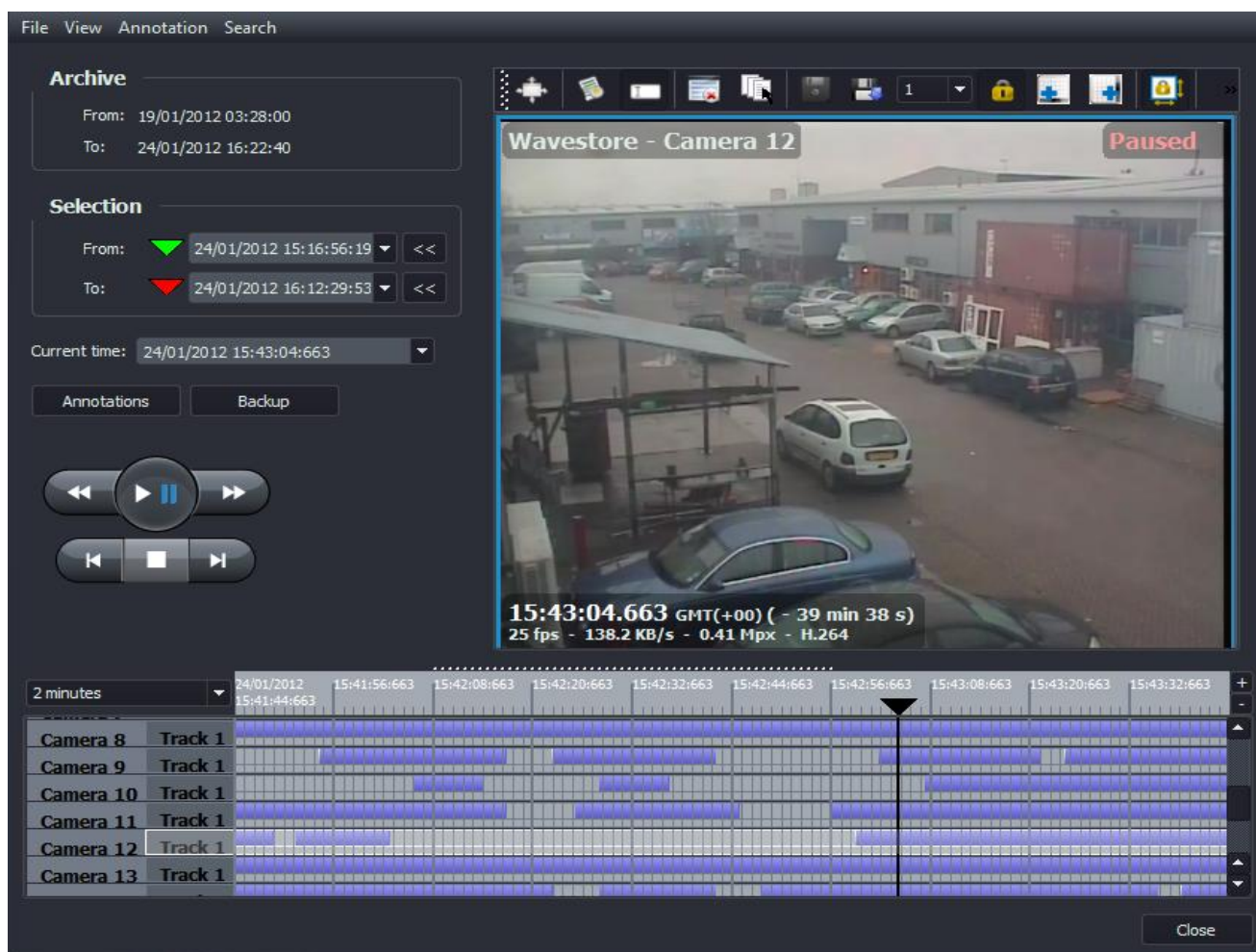


Figure 5.14 Find Screen Time Span reset to 2 minutes

5.11 Annotation

The Annotation feature allows you to mark footage of interest, for quick recall at a later date.

To create Annotation Notes for footage, or search for notes previously created, first click on the 'Annotations' button to call up the Annotation Edit Dialog screen.

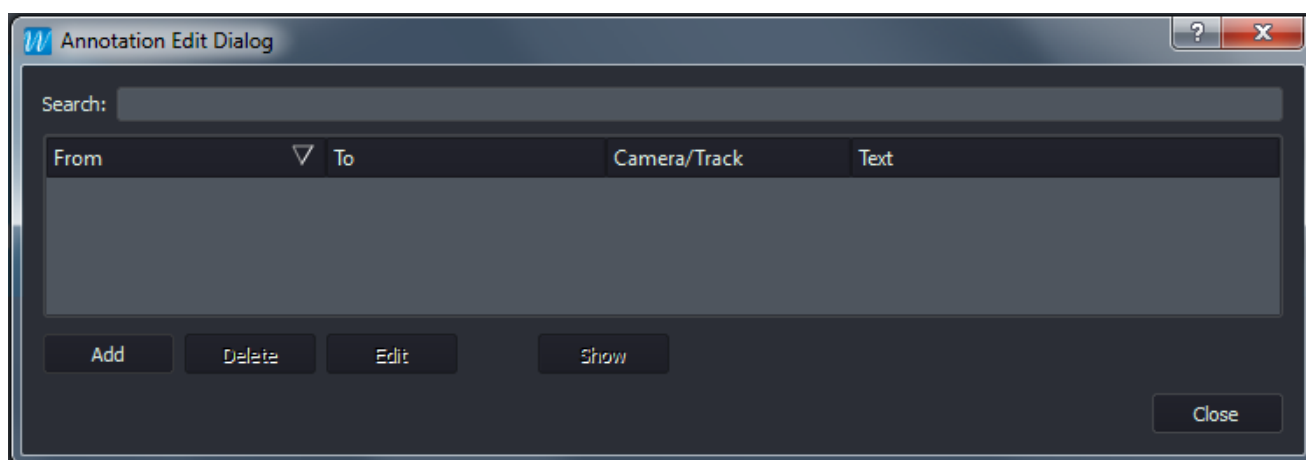


Figure 5.15 Annotation Edit Dialog Screen

To add an Annotation Note, click 'Add' to call up the Annotation Dialog screen.

A Device Tree is displayed showing including the recording tracks for each channel, and also fields for entering the desired time range and annotation notes. To create a note, select the desired channel and tracks, select the time range for the note, enter the text, and then click 'OK'.

Once completed, select the recording track that you wish to associate the note with, and click 'OK' to Save.

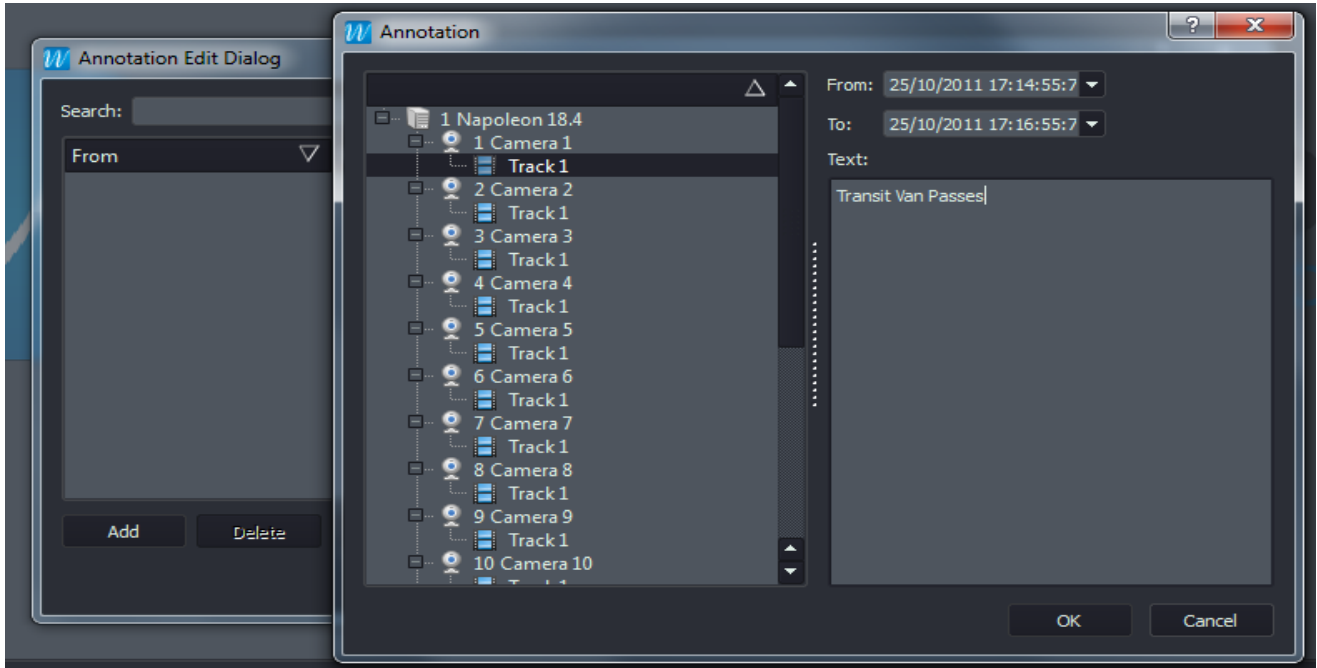


Figure 5.16 Adding Annotation for footage

To playback annotated footage, you can highlight an entry from the list and click 'Show'.

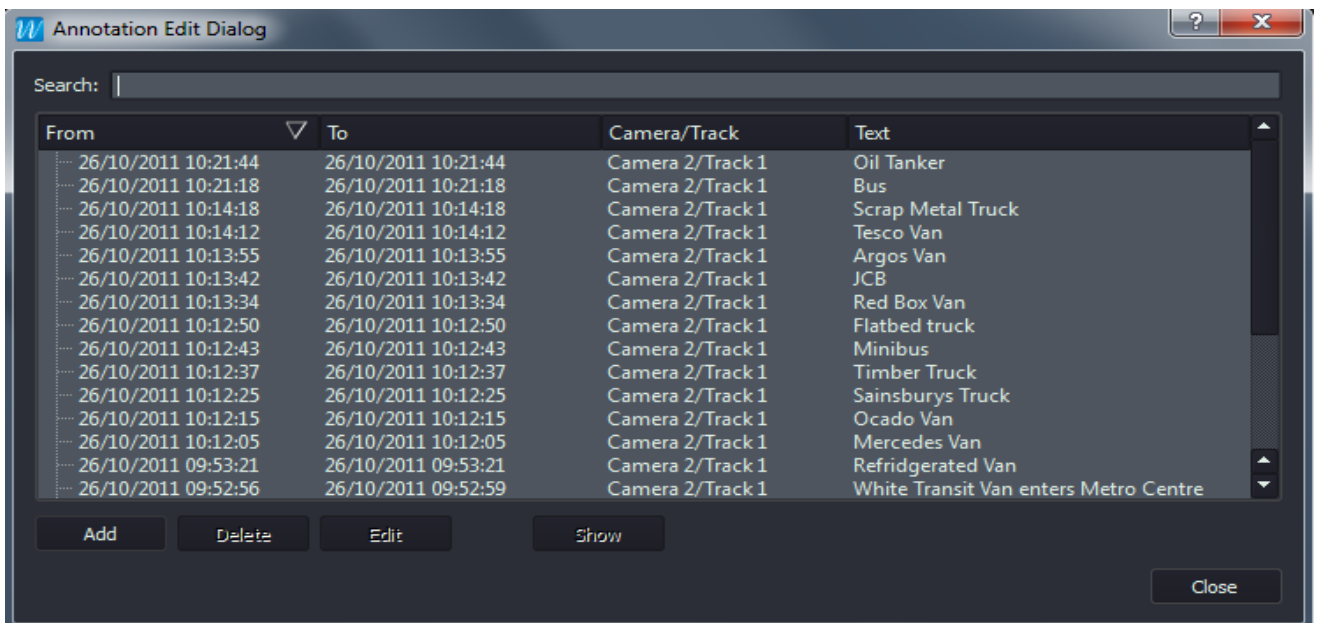


Figure 5.17 Annotation Event List

Alternatively, we can carry out a search on the annotation text by entering ‘*searchterm*’ in the Search field, then clicking ‘Enter’ to generate a list of Search results.

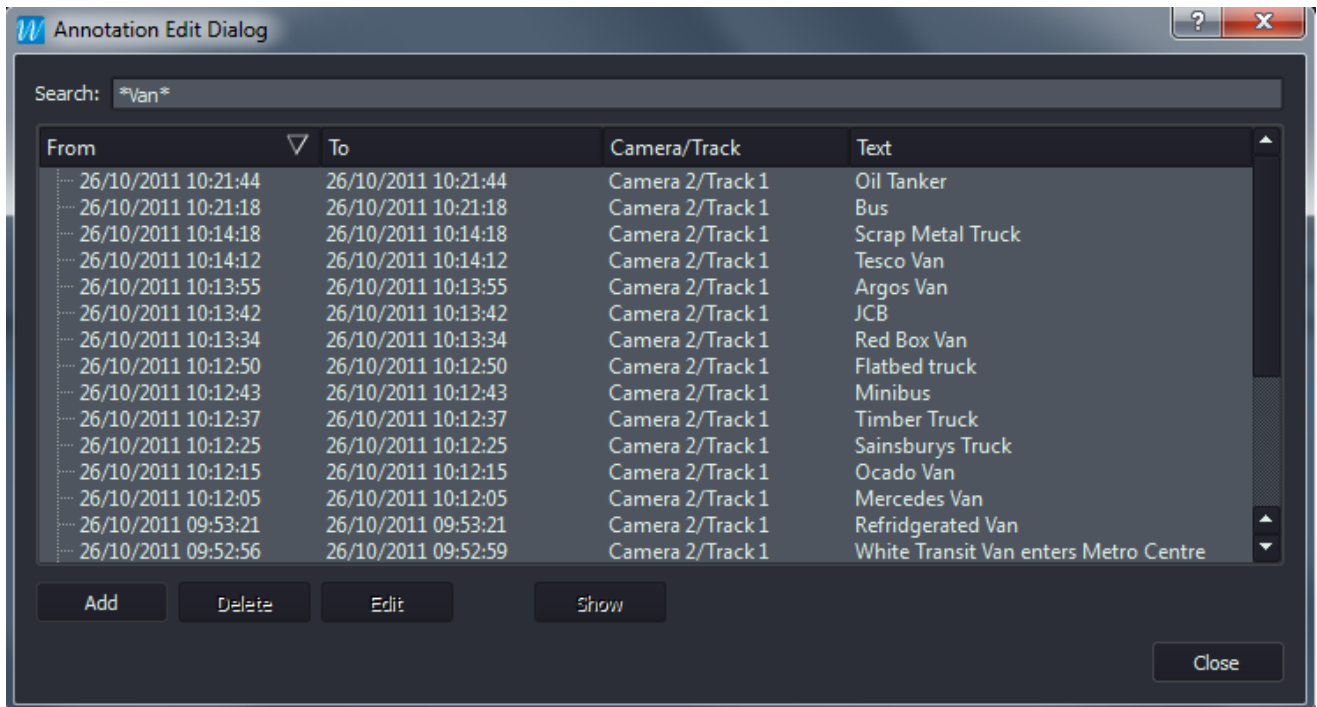


Figure 5.18 Entering Annotation Search Text

Click ‘Enter’ to generate a list of Search results:

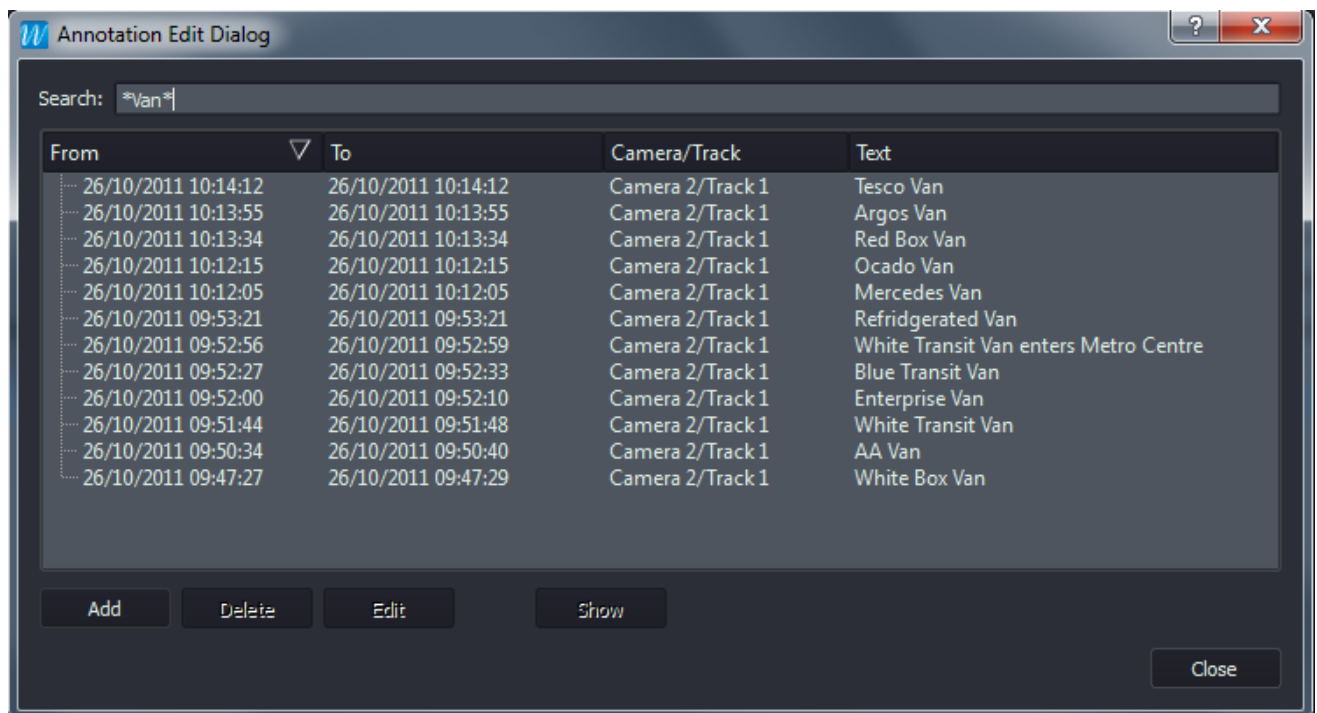


Figure 5.19 Annotation Search Results for '*Van*'

To delete an annotation note, select the note of interest and click the ‘Delete’ button

Section 6 Backing up Footage from Live Screen

6.1 Overview

Footage can be exported from the server in a variety of formats, from either the Live View screen or the Find screen.

The Wavestore Native format (.WSB) is supported as standard, and an optional licensed upgrade offers other formats such as .AVI and .WMV.

Wavestore Native format is the recommended choice for backups, and provides support for both encryption and image authentication.

Section 4 describes how to identify the footage that you require using the Quick Search function on the Live View screen.

6.2 Quick Backup from Live screen

Once we have identified required footage using the Search function, we can carry out a backup from the Live Screen as follows:

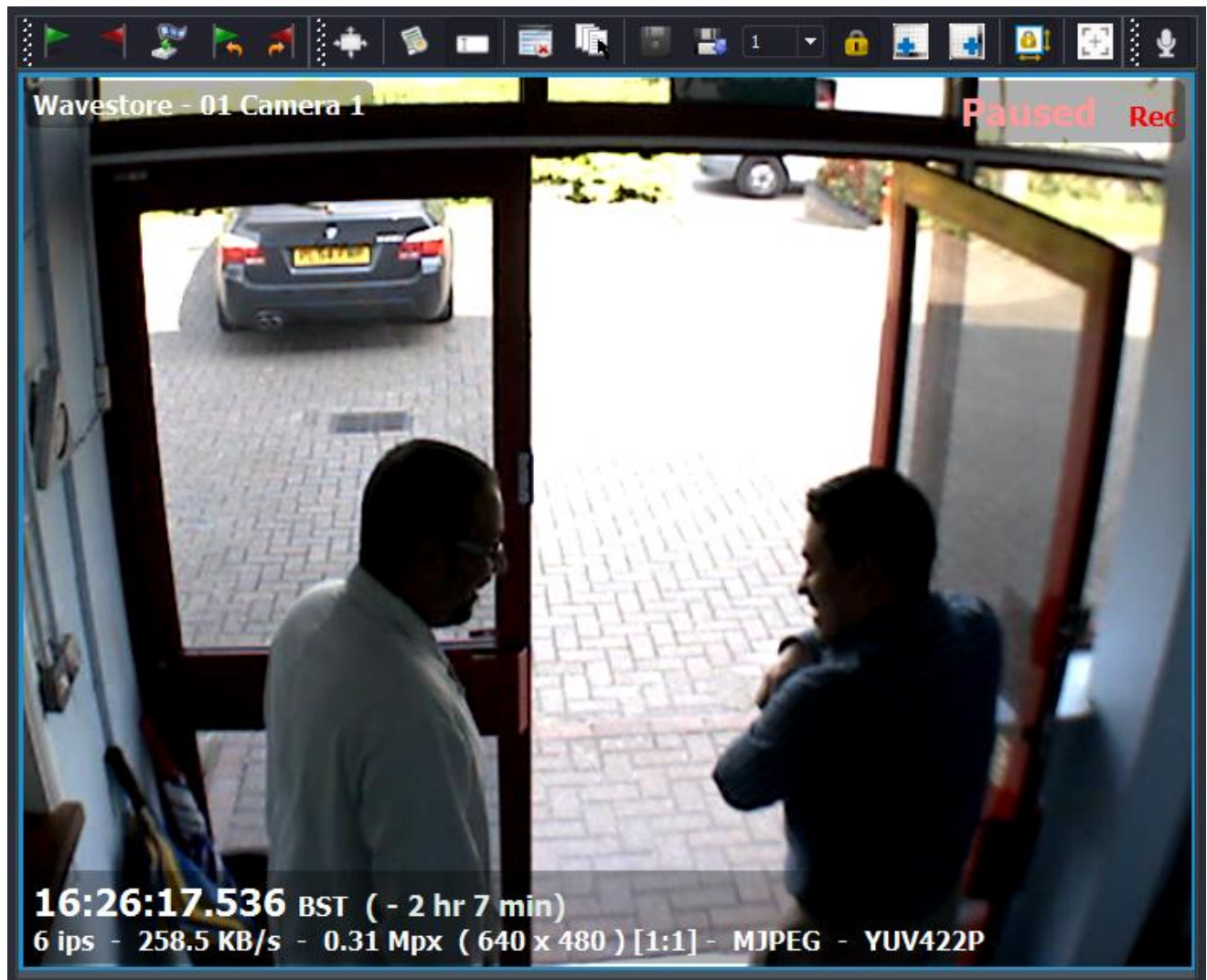


Figure 6.1 Quick Backup – Playback paused at the start of required footage

Click on the 'Mark Time for Start of Backup' button (green flag icon) on the Video Toolbar when you have reached the start point of the footage that you require (use the Pause function if necessary).



Figure 6.2 Quick Backup – Mark 'From Time' for backup

If you move the mouse pointer over the lower edge of an individual camera view, you can see that a green arrow is now shown on the time slider, showing the Start Time for the backup.

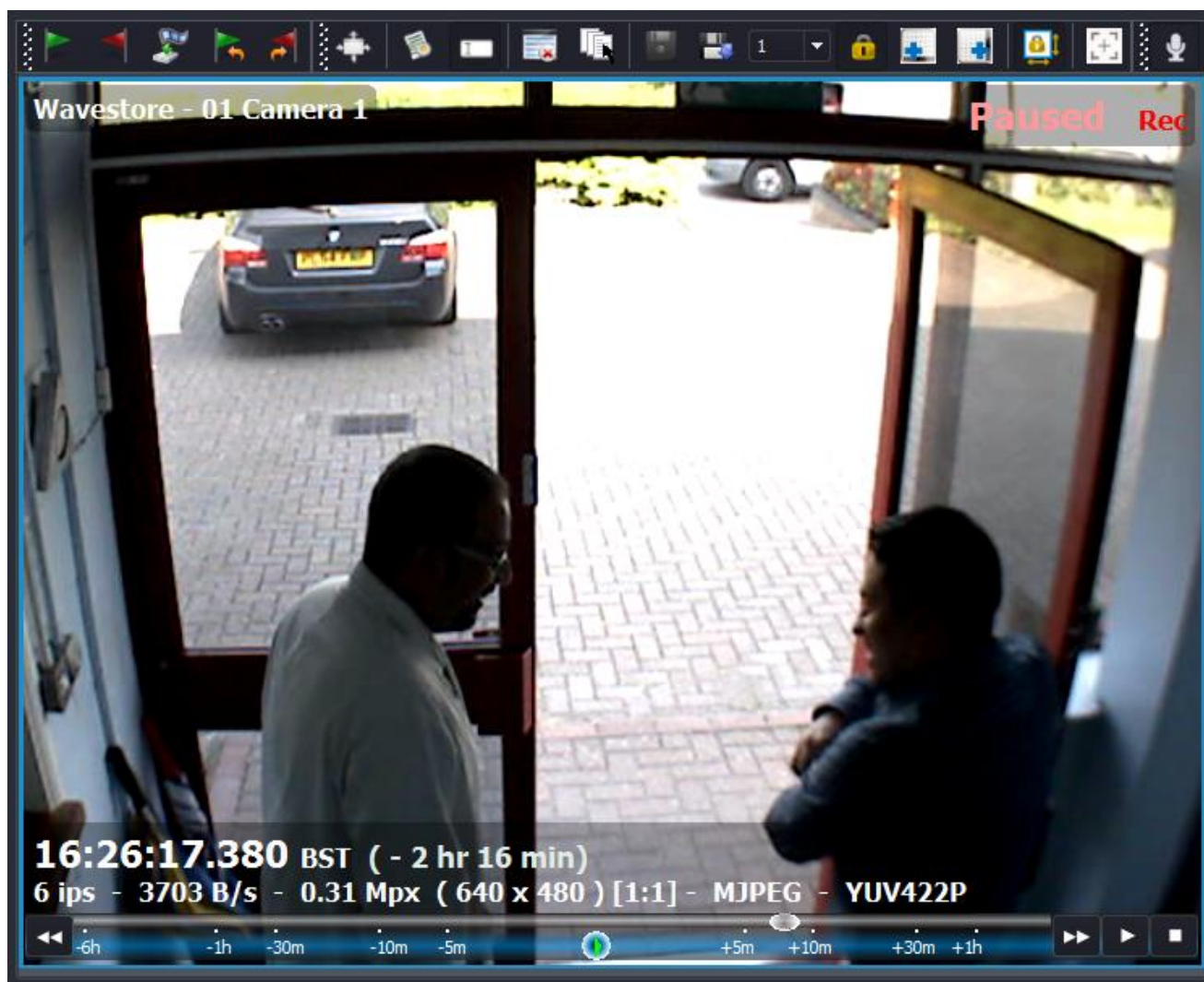


Figure 6.3 Quick Backup – Green 'From Time' marker on time slider

If you move the mouse pointer over the lower edge of an individual camera view, you can see that a green arrow is now shown on the time slider, showing the Start Time for the backup.

You can now resume playback of the footage until the desired end point of the Backup is reached.

If the Video Display that you are working with is a dewarped view from a hemispheric camera (see Appendix B), you can pan/tilt/zoom within the Video Display during playback to track a person or object. Once you have set the End Time for the backup, the file that you create will show your tracking movements (pan/tilt/zoom).

Once you have reached the desired end time for your backup, click on the 'End Time for Backup' button (Red Flag icon on Video Toolbar). You may wish to pause Playback first.

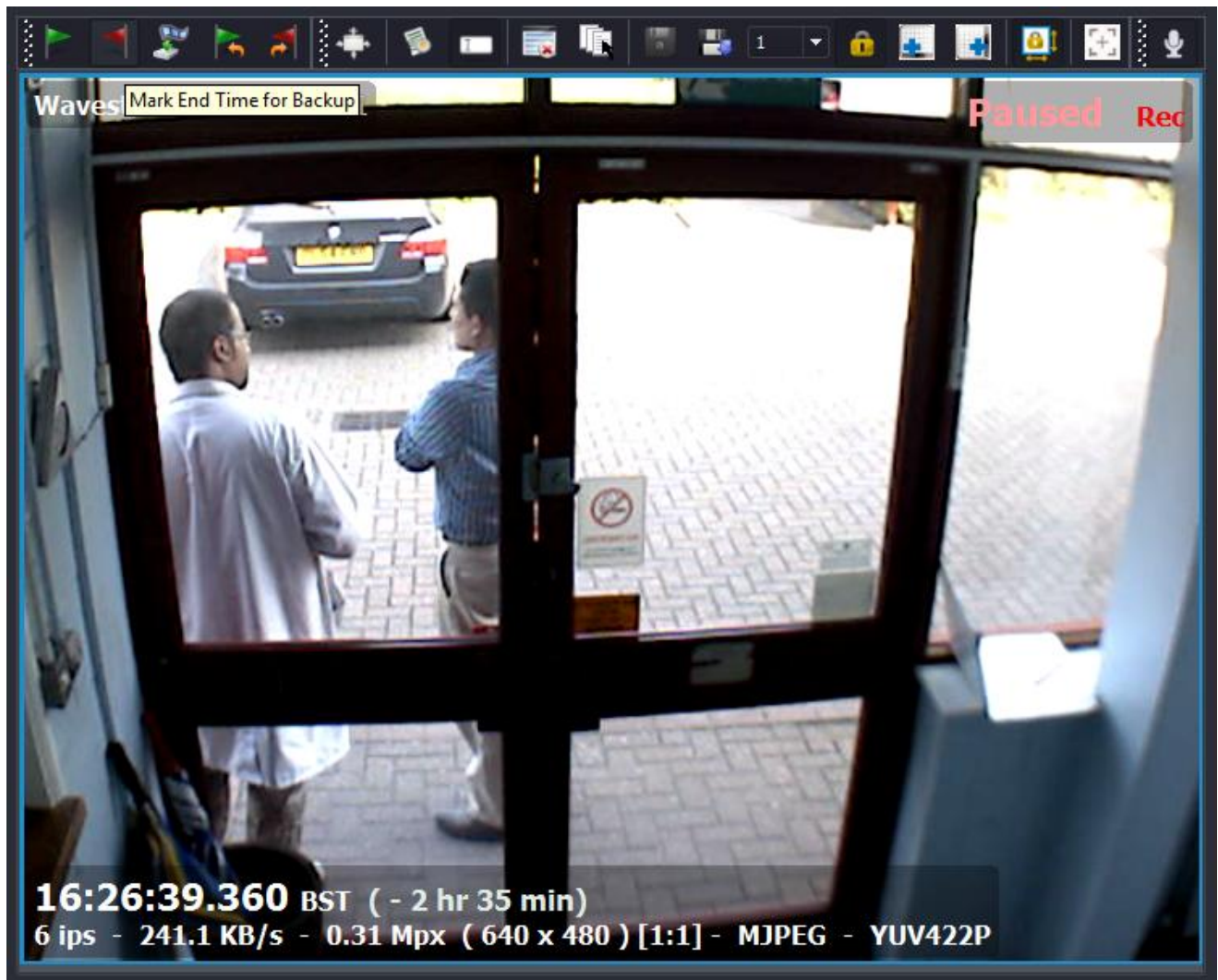


Figure 6.4 Quick Backup – Mark 'End Time' for backup

If you move the mouse pointer over the lower edge of an individual camera view, you can see that a red arrow is now shown on the time slider, showing the End Time for the backup.

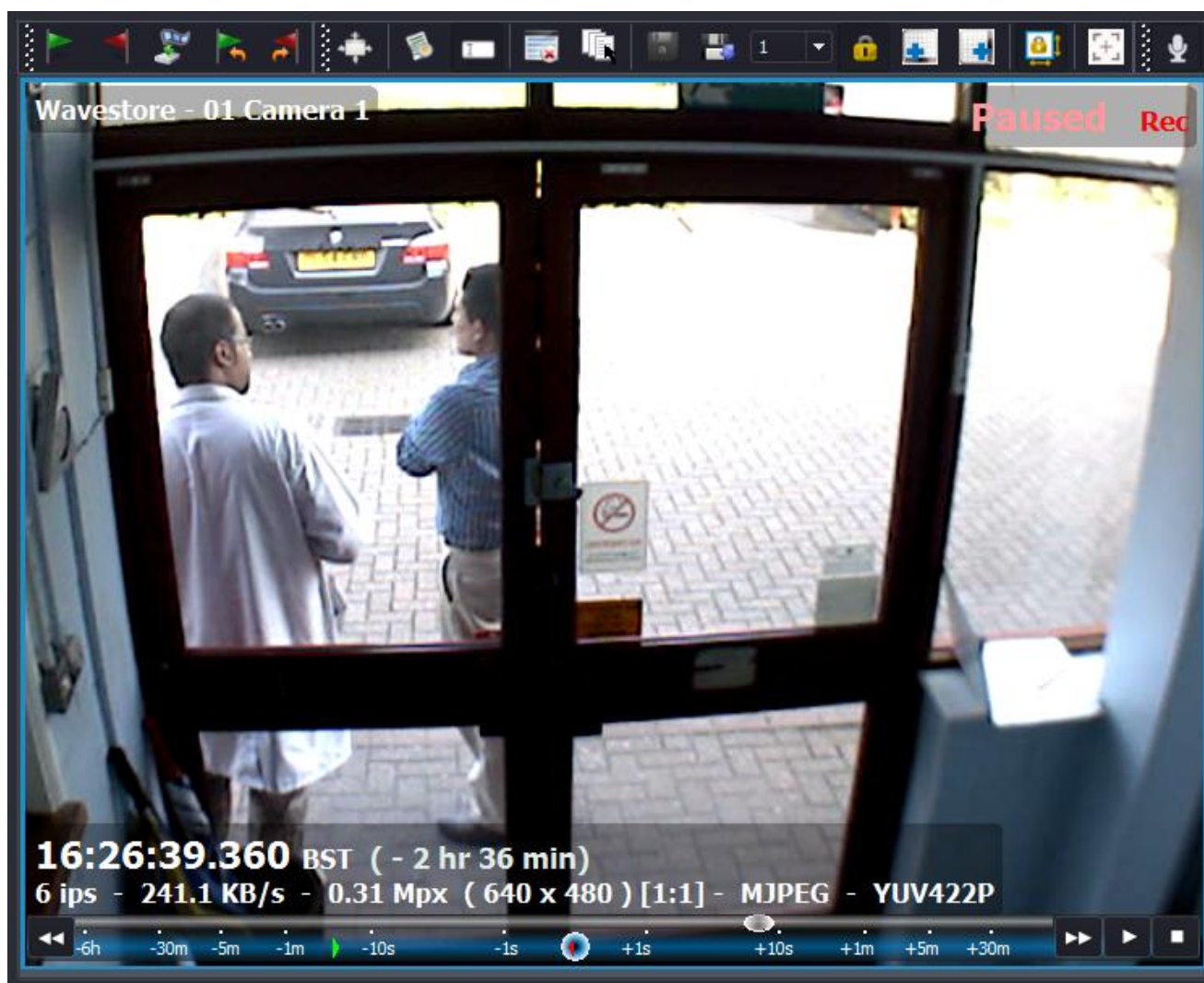


Figure 6.5 Quick Backup – Red 'End Time' marker on time slider

Click on the Backup Dialog button on the Video Toolbar (filmstrip icon) to call up the Backup dialog menu:

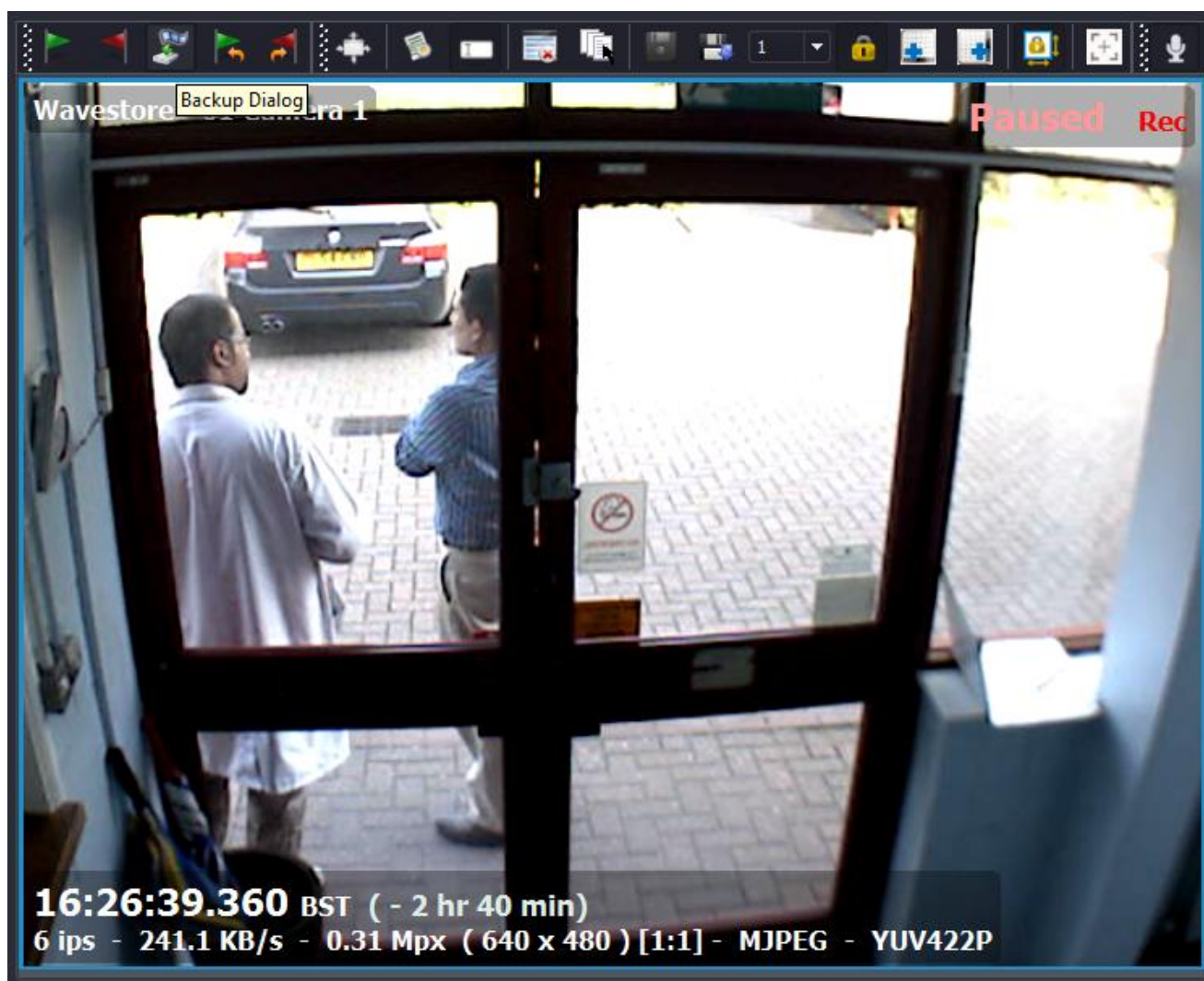


Figure 6.6 Quick Backup – Backup Dialog button

The Backup dialog menu will now appear:

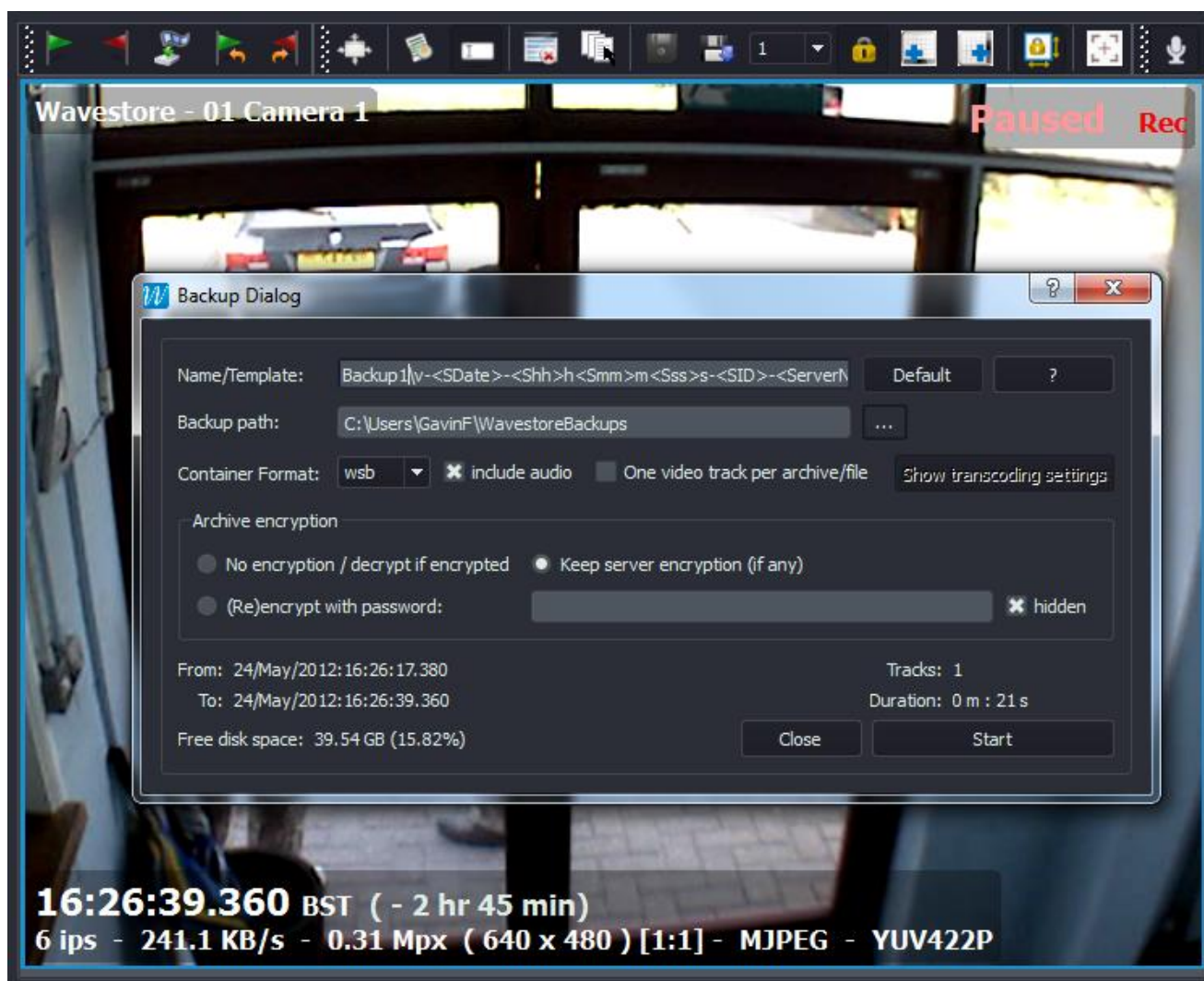


Figure 6.7 Quick Backup – Backup Dialog menu

The backup screen has the following options:

- **Name/Template** – Enter the filename for your backup
- **Backup Path** - The folder or directory into which the backup file(s) will be saved.
- **Container Format** – format to be used for the download e.g. AVI, WMB, WSB (licensed option)
- **Include Audio** - Selects whether audio should be included, if any audio channel(s) are associated with the selected video channels.
- **One video track per archive/file** - Chooses whether tracks should be merged as a single file or exported as individual files
- **Keep/Remove Encryption** – Applies if the downloaded channel has been encryption active
- **(Re)encrypt with password** – restricts access to the backup through use of user configurable password

If your client installation is licensed with the transcoding option, you can select an alternative backup format (e.g. AVI). Select 'Show Transcoding Settings' and then 'Show Subtitles Settings', and the screen shown below will appear allowing you configure the transcoding options as you require.

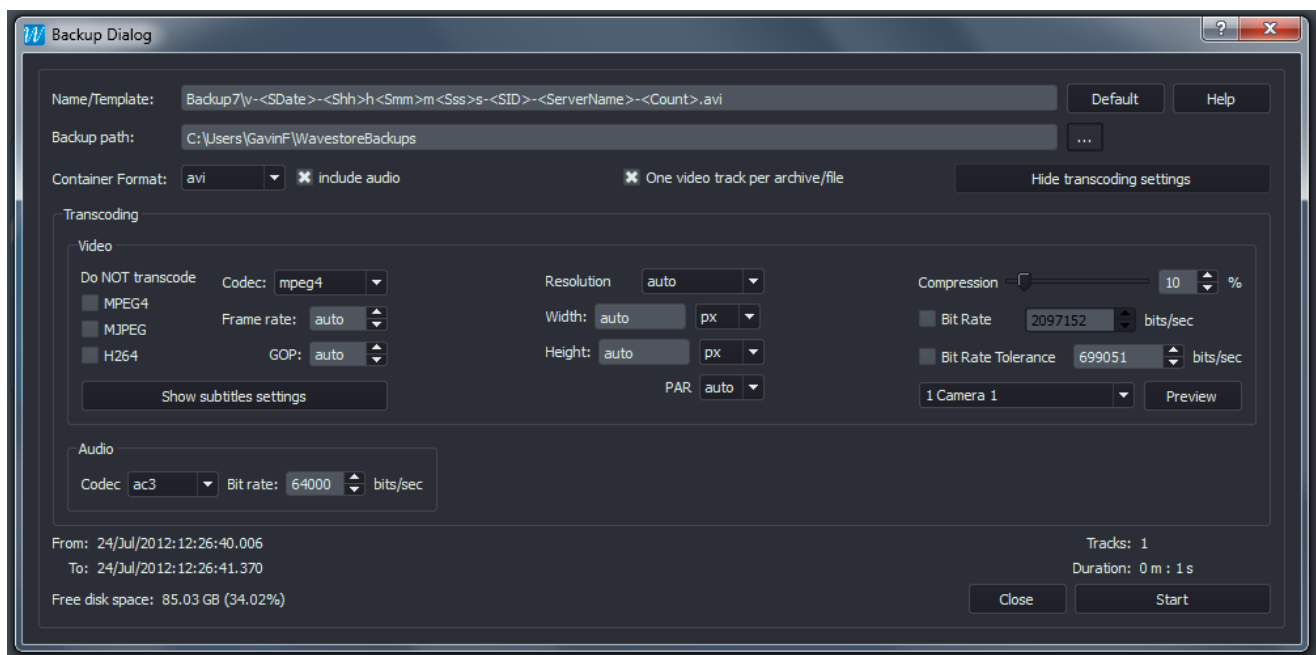


Figure 6.8 Backup Dialogue Screen showing Transcoding settings

Some points to note:

- When creating a backup using .avi container format, selecting the 'Do NOT Transcode' option (Video submenu in Transcoding section) for the footage type(s) that you are downloading (MPEG4, MJPEG or H.264) will result in higher image quality.
- Certain codecs impose limitations on footage that has been recorded at a low frame rate; in this case you should select the WMV container and the ASV1 codec
- Compression or Bit Rate can be set manually if required, based on the following:

$$\text{Bit Rate} = (\text{Compression}/100) \times W \times H \times \text{BPP (Bits per Pixel)} \times \text{Frame Rate}$$

Where BPP = YUV420 : 12 and YUV422 : 16

$$\text{Bit Rate Tolerance} = \text{Bit Rate}/4$$

Subtitles on the backup can be configured as you require by clicking on 'Show Subtitles Settings', and then configuring as you need:

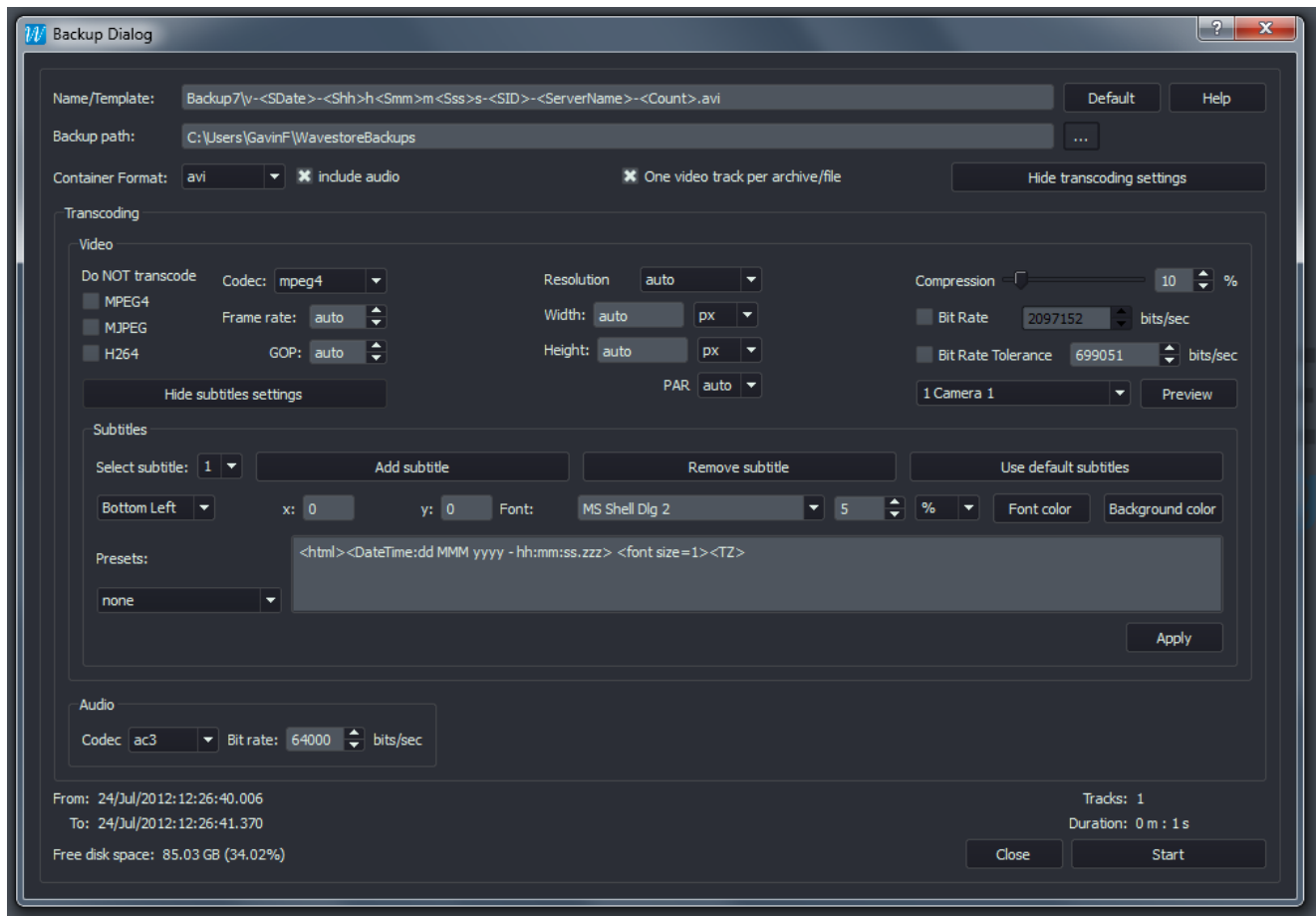


Figure 6.9 Backup Dialogue Screen showing Transcoding and Subtitle settings

Some experimentation may be required to optimise the size of the subtitles in the backup; this can be configured in the Font Size setting (Subtitles submenu)

If the backup operation is being carried out from a remote location using WaveView client software, then footage can only be saved either to the hard disk of the PC, or to a connected USB device.

It is then possible to burn the backup file to CD/DVD, by using standard CD/DVD burning software (e.g. Nero/Roxio) to copy the archive directory.

Browse to your desired Backup Path by clicking on the '...' button, and then select your desired Container Format.

Finally click 'Start'; the progress bar will fill during the backup, with an acknowledgement message displayed once the backup is completed.

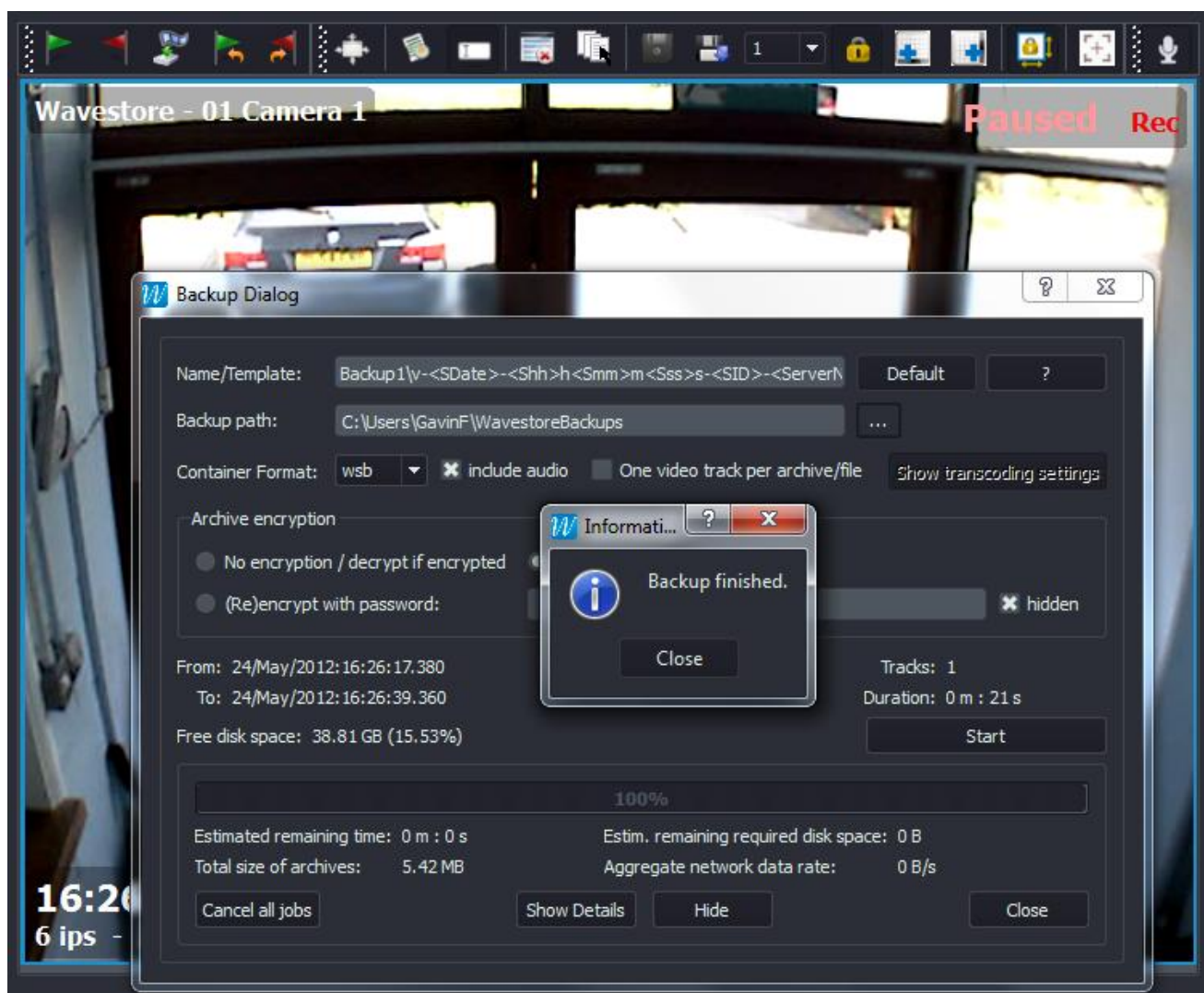


Figure 6.10 Quick Backup – Backup completion message

Once you have completed the backup, you will be prompted to add a copy of WaveView software to the backup folder.

This software can be used to playback the backup file from the media.

It is not necessary to first install the software onto the PC being used to play the backup file.

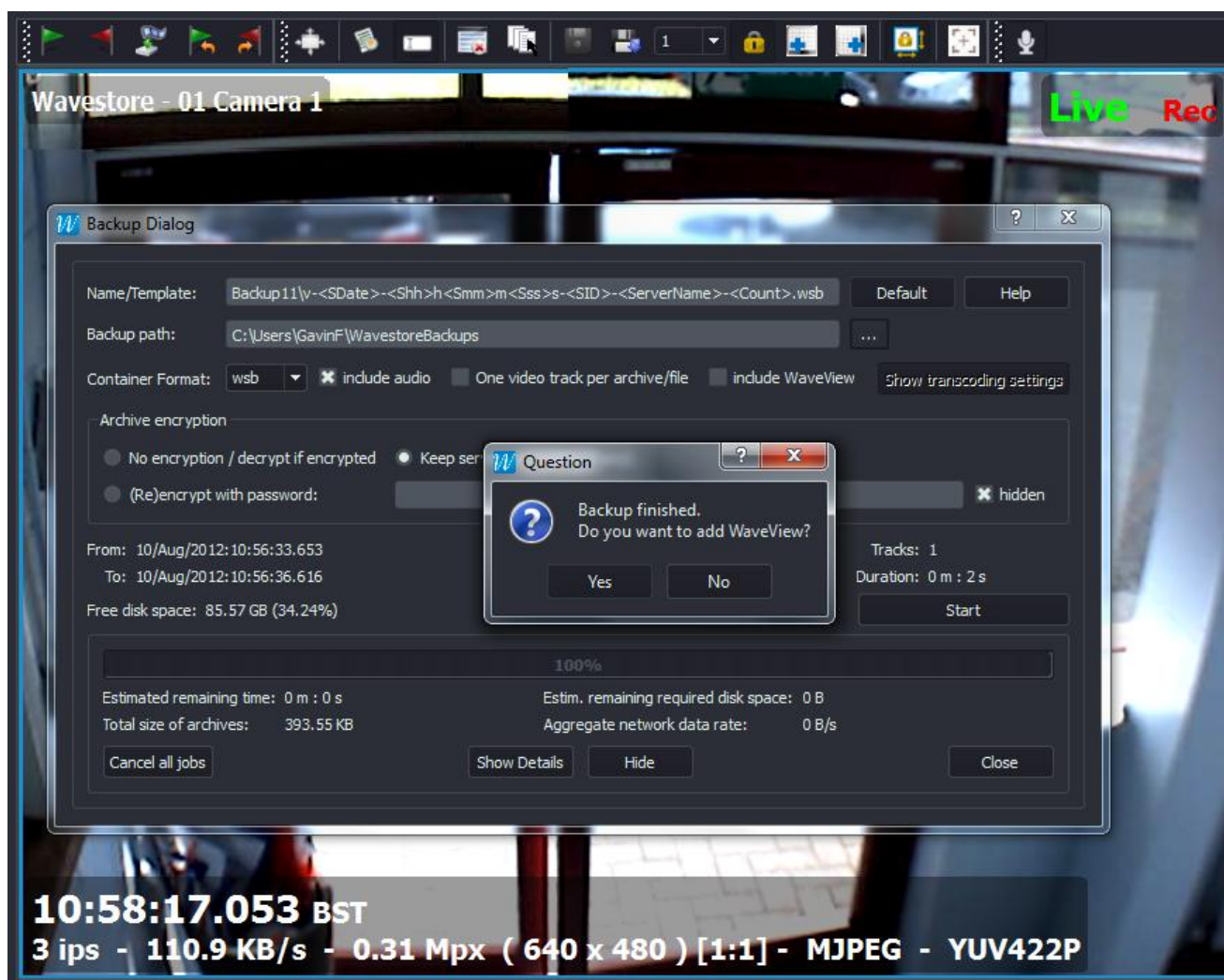


Figure 6.11 Quick Backup – prompt to add WaveView

To add a copy of the WaveView software, click on 'Yes'

You will now be prompted to confirm the location where WaveView will be saved.

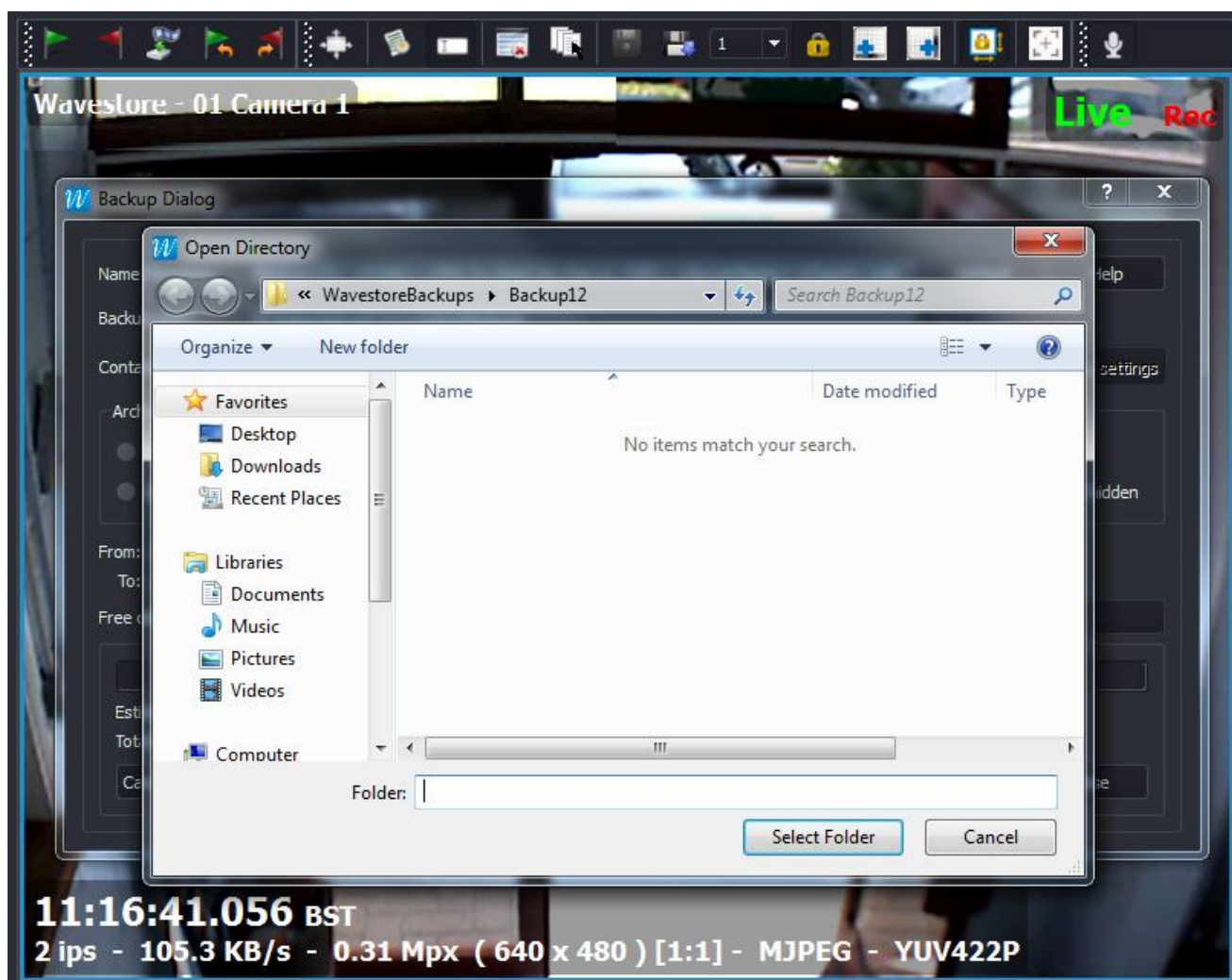


Figure 6.12 Quick Backup – selecting destination folder for WaveView

Browse to your desired folder, then click 'Select Folder'.

A progress bar will now fill from left to right.

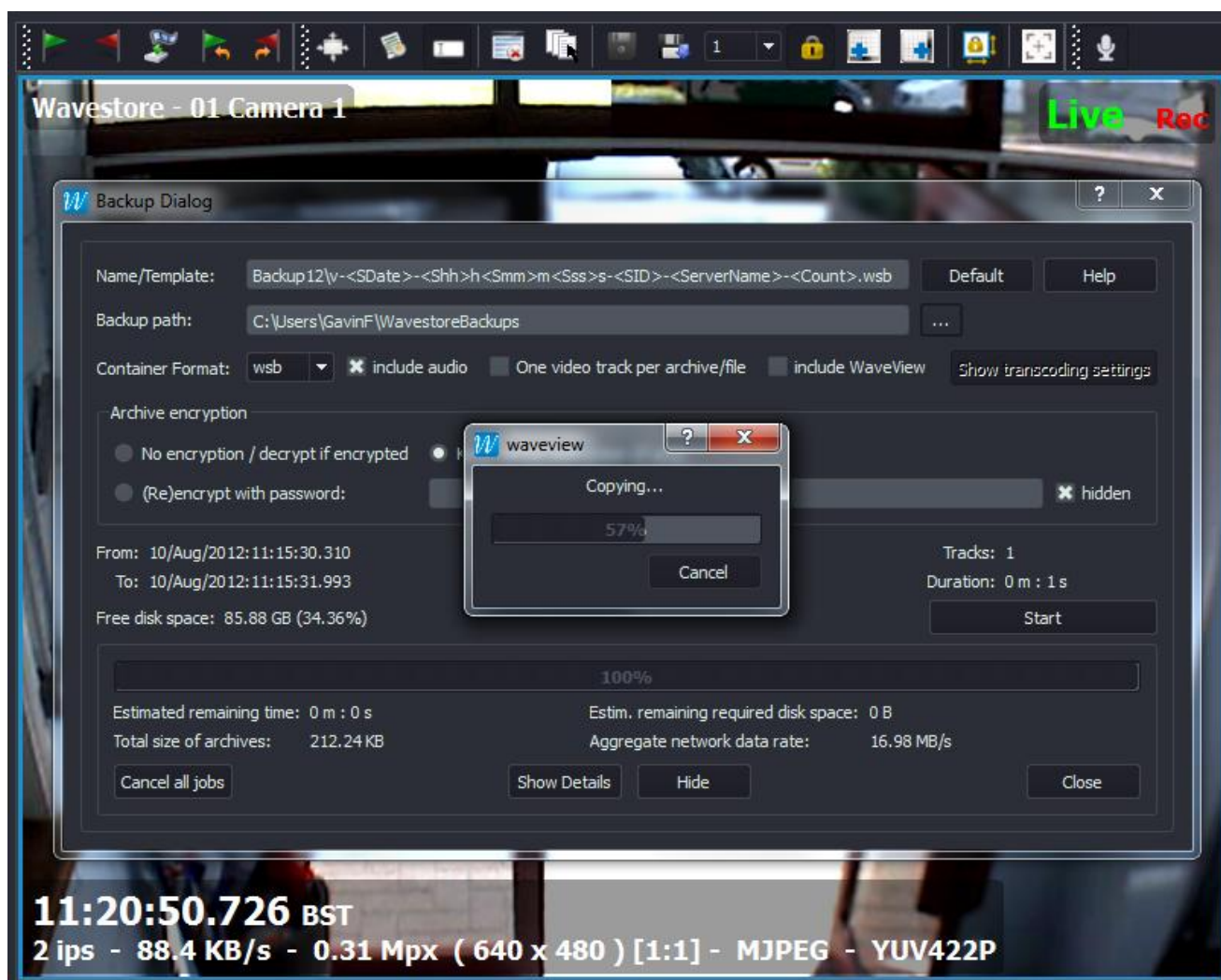


Figure 6.13 Quick Backup – WaveView copy progress bar

A confirmation message will appear once complete.

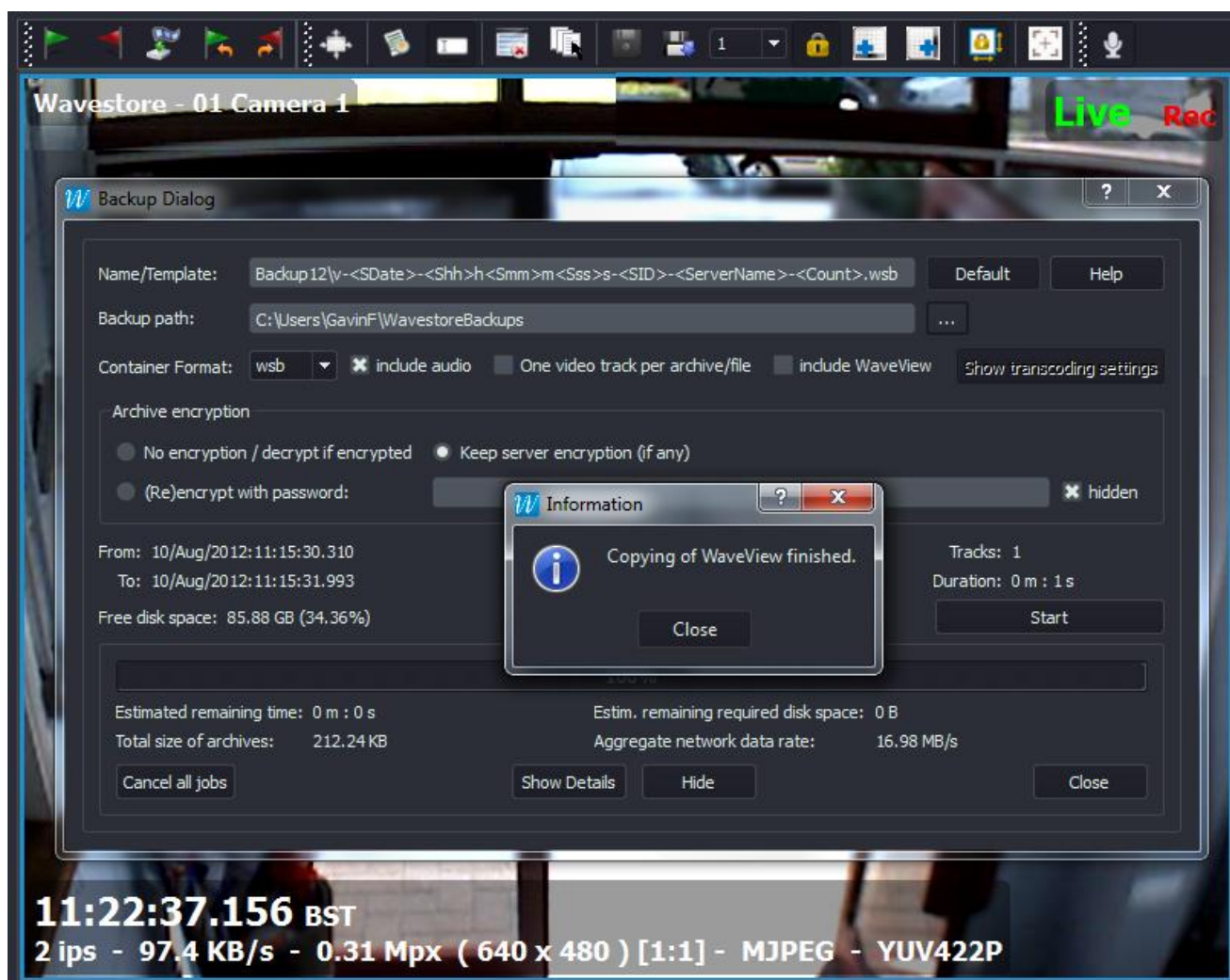


Figure 6.14 Quick Backup – WaveView copy completion message

Section 9 gives details on how to playback exported files using a PC.

Section 7 Backing up Footage from Find Screen

7.1 Overview

Footage can be exported from the server in a variety of formats, from either the Live View screen or the Find screen.

The Wavestore Native format (.WSB) is supported as standard, and an optional licensed upgrade offers other formats such as .AVI and .WMV.

Wavestore Native format is the recommended choice for backups, and provides support for both encryption and image authentication.

Section 5 describes how to identify the footage that you require using the Search function in the Find screen.

7.2 Setting Start and Stop Times

To create a Backup in the Find Screen, we must first select the Backup start and stop times in the Find screen (menu path *Windows -> Find*)

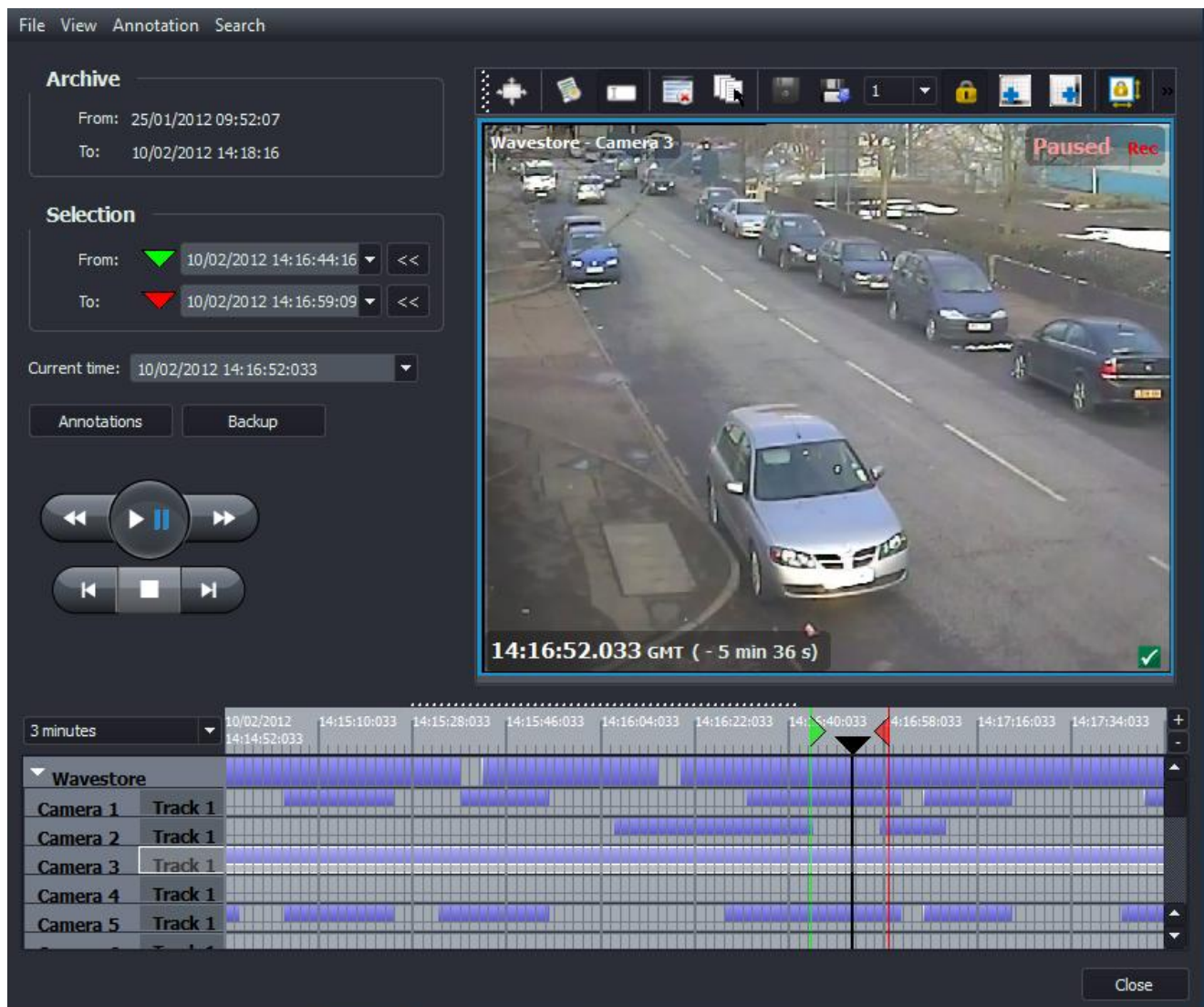


Figure 7.1 Backup Dialogue Screen

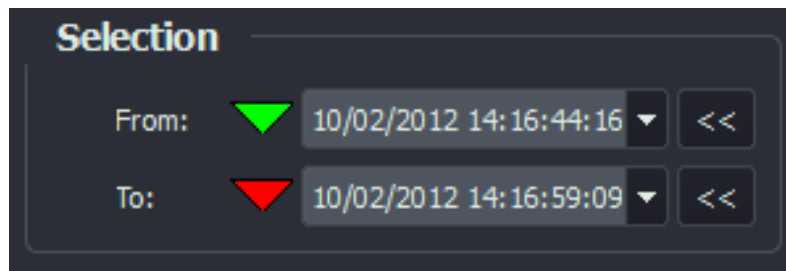


Figure 7.2 Backup selection

This can be carried out either by clicking and dragging the green and red 'From' and 'To' markers on the Search timelines.

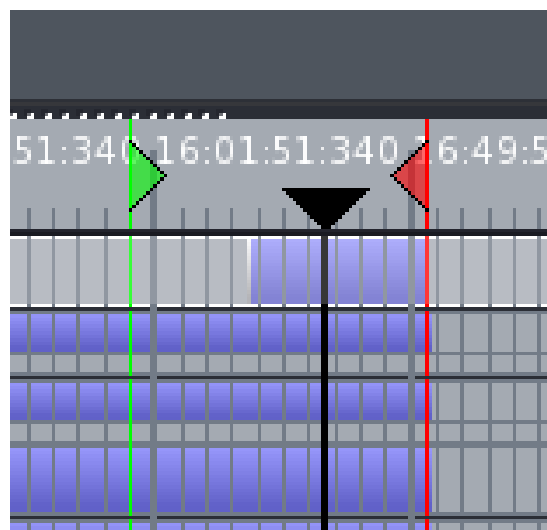


Figure 7.3 Time Line Markers

For each icon, click the '<<' icon when the green or red icon is positioned on the desired time (displayed in 'Current Time' field).

Alternatively, enter text directly into the Selection 'From' and 'To' boxes.

7.3 Selecting Backup Channels

To select the audio/video channel that you want to back up, left-click on the timeline bar corresponding to that device. To select multiple cameras, hold down the 'CTRL' key and left click the required cameras of choice to add/remove them from the current selection.

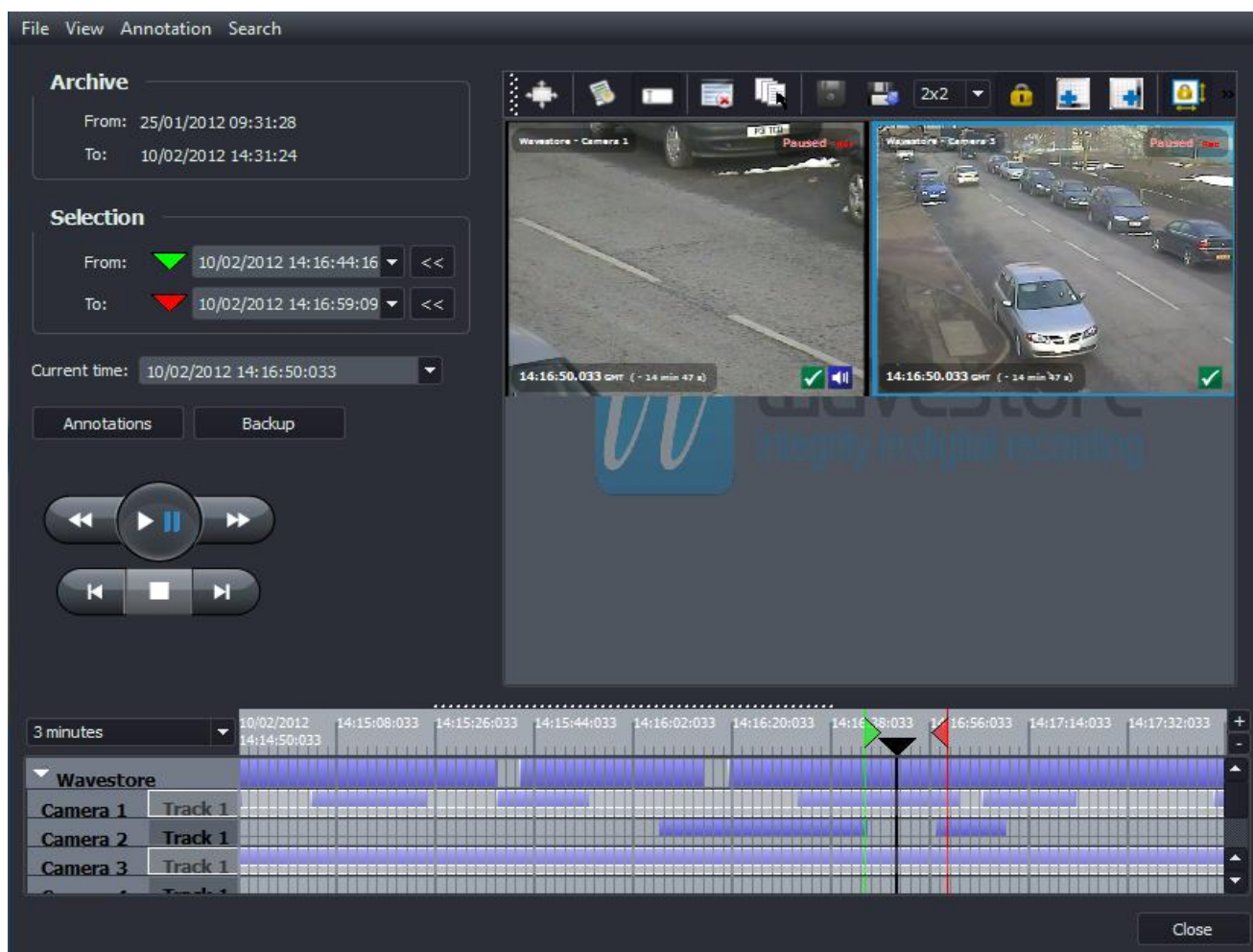


Figure 7.4 Backup Dialogue Screen

7.4 Backup Options

Once you have chosen the channels, click the 'Backup' button to open the Backup Dialog Screen.

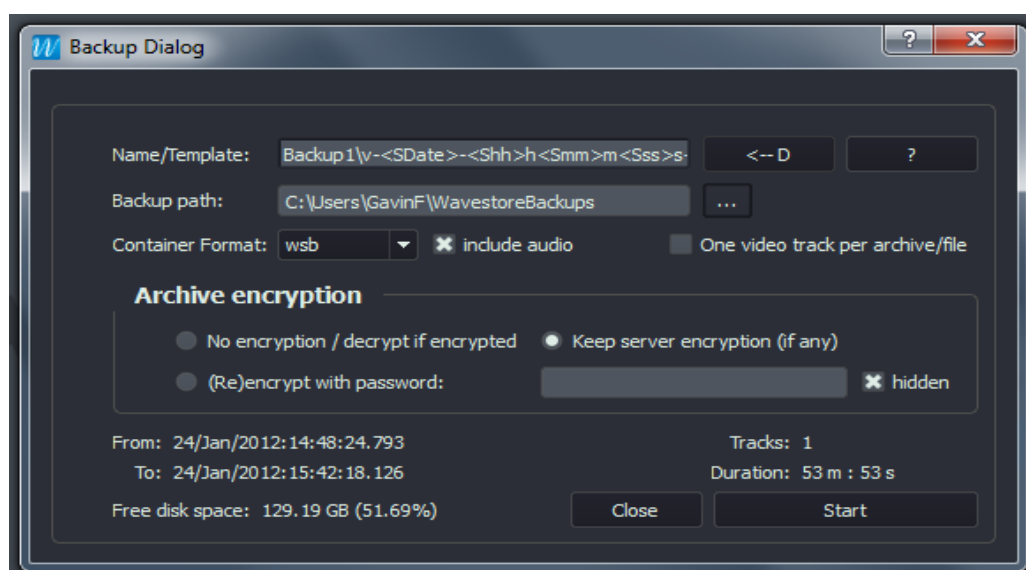


Figure 7.5 Backup Dialogue Screen for native Wavestore .wsb format

The backup screen has the following options:

- **Name/Template** – Enter the filename for your backup
- **Backup Path** - The folder or directory into which the backup file(s) will be saved.
- **Container Format** – format to be used for the download e.g. AVI, WMB, WSB (licensed option)
- **Include Audio** - Selects whether audio should be included, if any audio channel(s) are associated with the selected video channels.
- **One video track per archive/file** - Chooses whether tracks should be merged as a single file or exported as individual files
- **Keep/Remove Encryption** – Applies if the downloaded channel has been encryption active
- **(Re)encrypt with password** – restricts access to the backup with a password

If your client installation is licensed with the transcoding option, you can select an alternative backup format (e.g. AVI). Once you have selected an alternative backup format, select 'Show Transcoding Settings' and the screen shown below will appear allowing you to configure the transcoding options as you require.

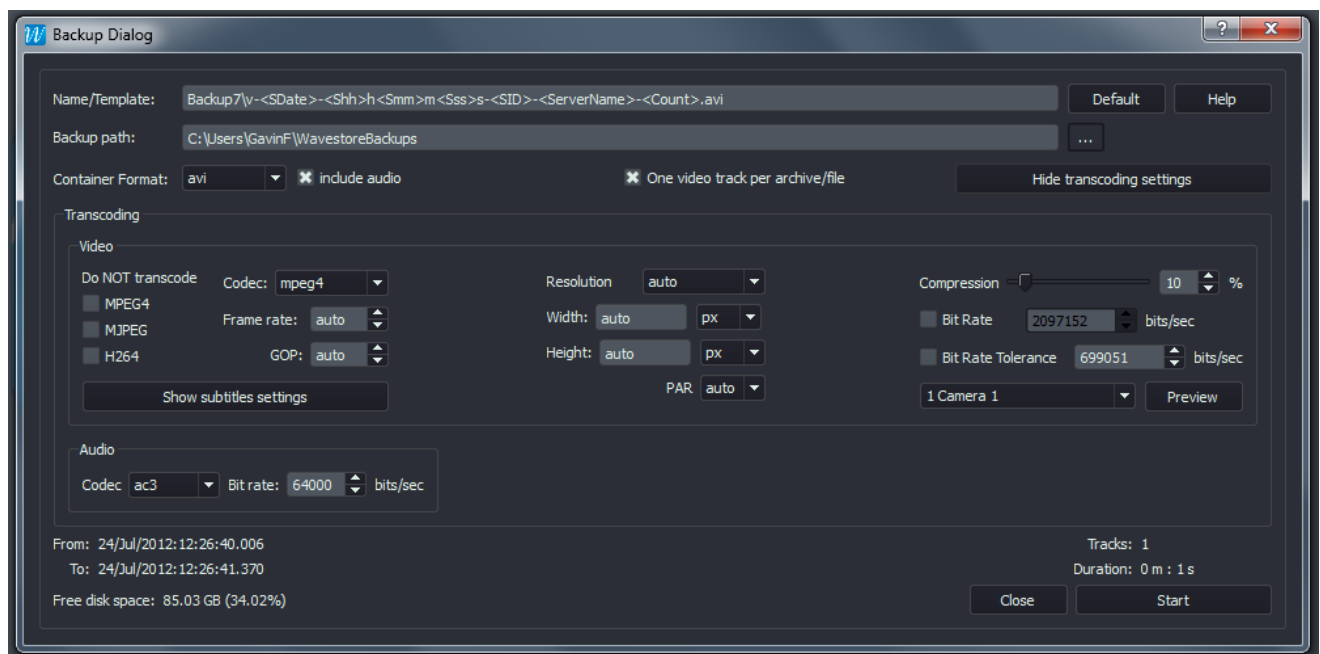


Figure 7.6 Backup Dialogue Screen showing Transcoding settings

Subtitles on the backup can be configured as you require by clicking on 'Show Subtitles Settings', and then configuring as you need:

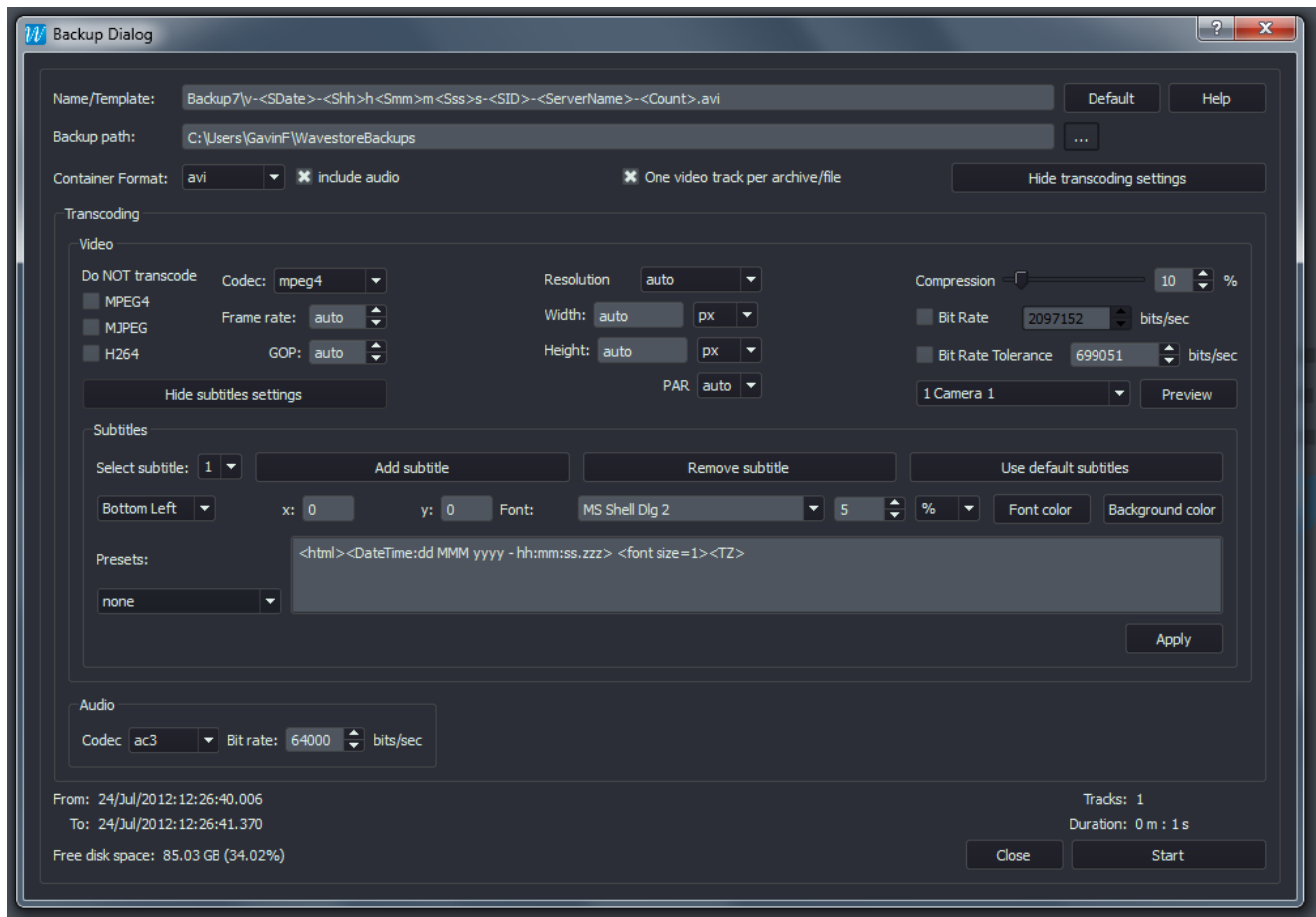


Figure 7.7 Backup Dialogue Screen showing Transcoding and Subtitle settings

Some points to note:

- When creating a backup using .AVI container format, selecting the 'Do NOT Transcode' option (Video submenu in Transcoding section) for the footage type(s) that you are downloading (MPEG4, MJPEG or H.264) will result in higher image quality.
- Some experimentation may be required to optimise the size of the subtitles in the backup; this can be configured in the Font Size setting (Subtitles submenu)

Click on Start to begin the backup, a confirmation message will appear once completed.

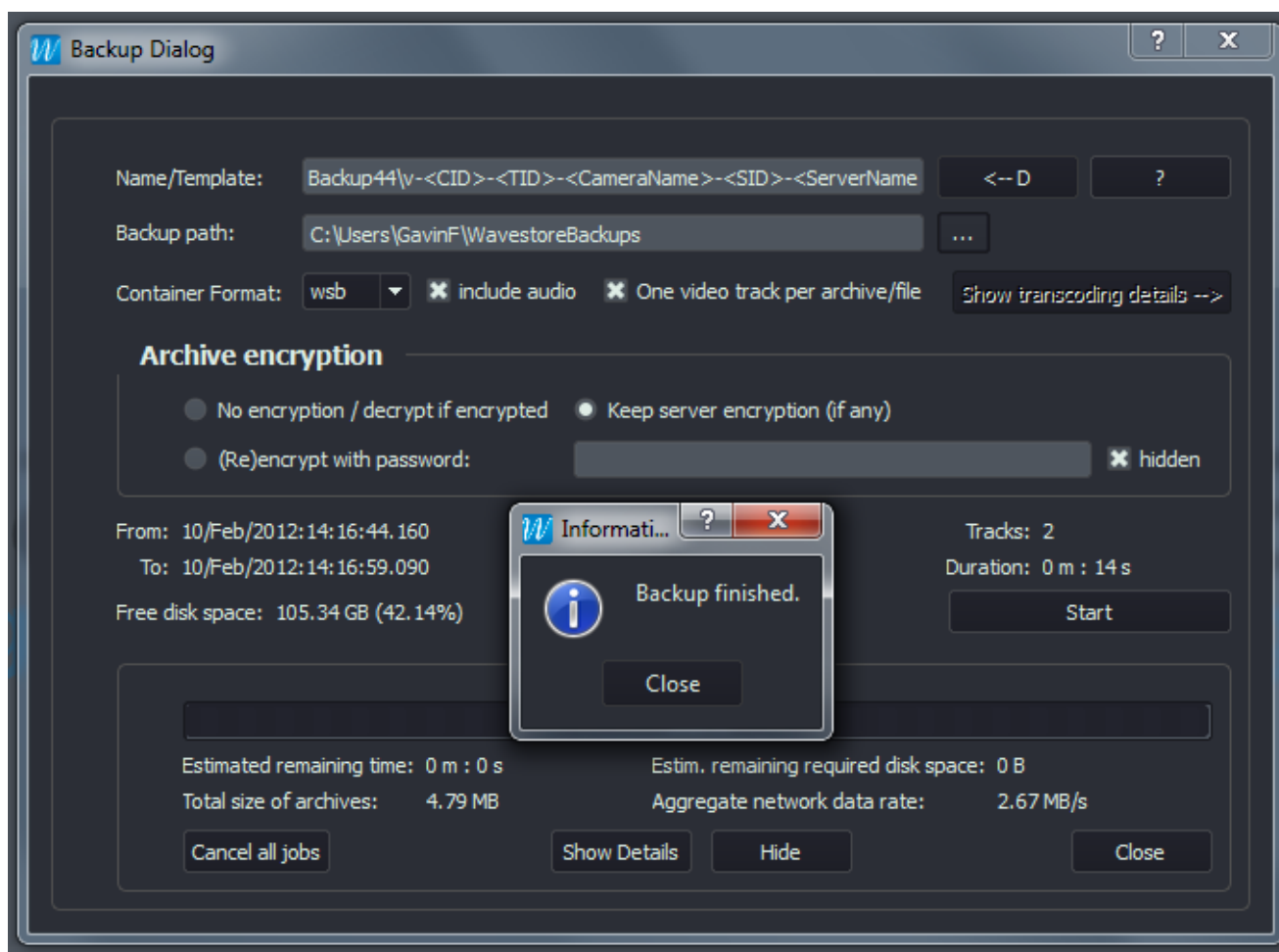


Figure 7.8 Backup Dialogue Screen

Footage can be backed up to a CD/DVD, but the backup must first be saved to the local drive of the PC, before using disc burning software (e.g. Nero) to burn the file to disc.

Section 9 gives details on how to playback exported files using a PC.

Section 8 Backing up Still Images to a Windows PC

Single still images can be backed up from the server (either in the Live View screen or Find screen) as follows:

- Select your desired channel for playback
- Pause playback at the point that you require, by using the playback controls
- Position your mouse pointer in the top right hand corner of the Video Display so the Video Display toolbar appears



Figure 8.1 Video Display Toolbar showing Edit Dialog icon

Clicking on the Edit Dialog button on the Video Display Toolbar (Pencil Icon - Section 3.6) captures the currently displayed image in a new Edit Dialog window:

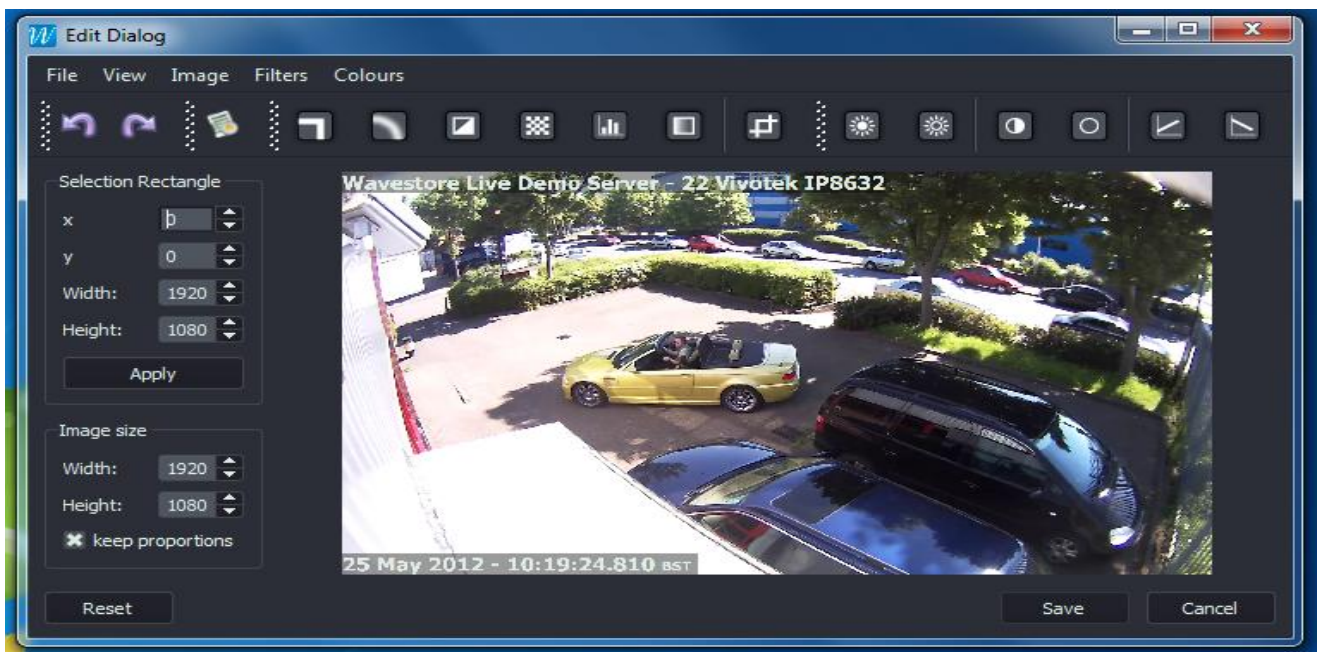


Figure 8.2 Edit Screen

This window contains the following pull down menus:

- **File** allows you to save a copy of the image (BMP, JPG or PNG format), and print out
- **View** show/hide the Image Processing Toolbars
- **Image** Crop (click and drag on the image to select an area).
- **Filters** Sharpen/Blur/Mosaic/Desaturate/Invert/Equalize (click and drag to select area).
- **Colours** Brightness +/-, Contrast +/- and Gamma +/- (click and drag to select area).

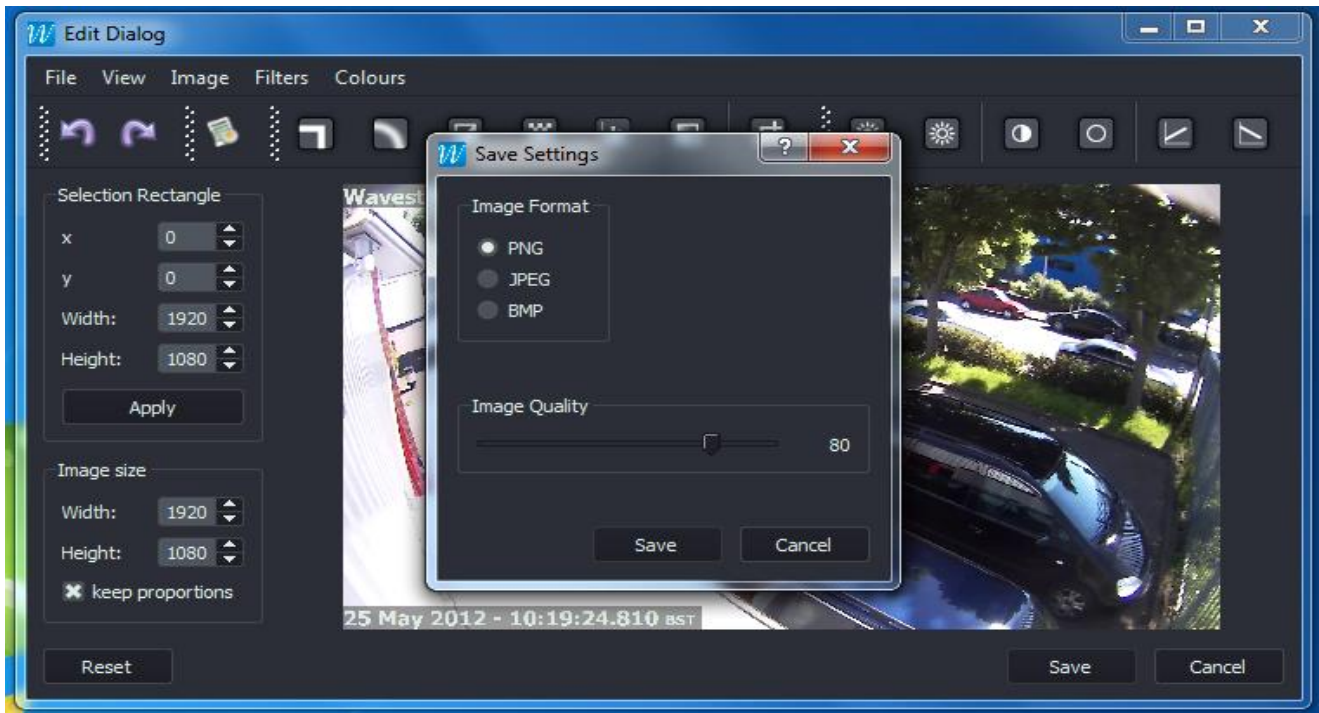


Figure 8.3 Still Image Backup

Following the menu path *Image -> Setup Subtitles* allows you to configure, reposition or remove the subtitles from the image.

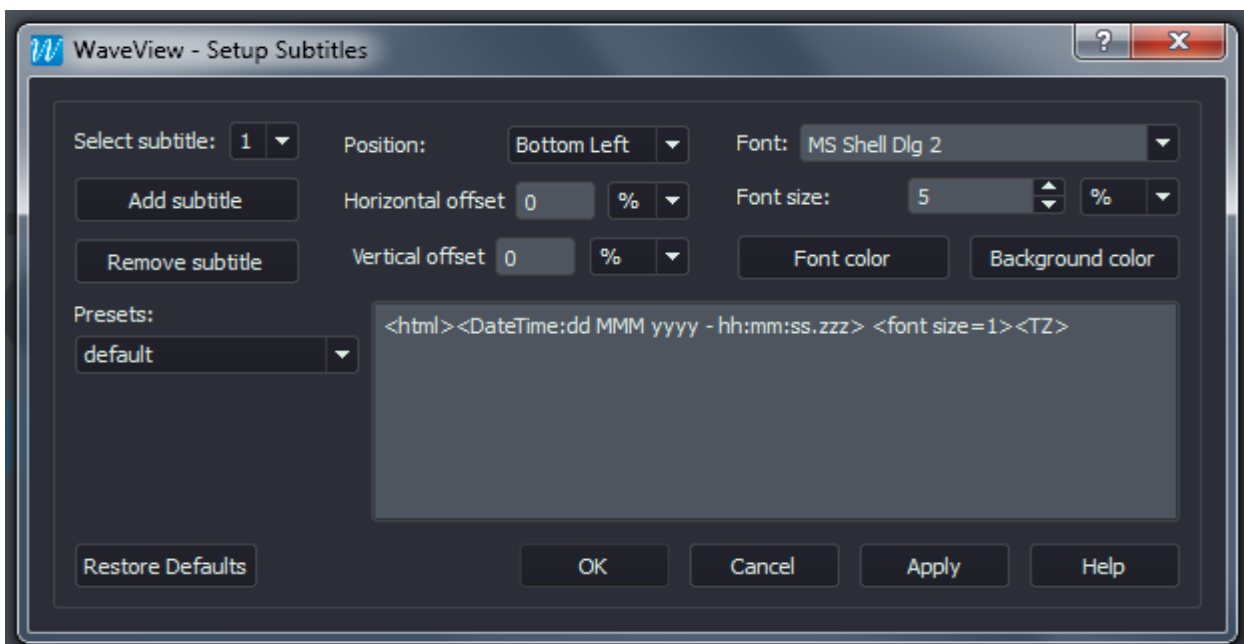


Figure 8.4 Edit Screen – Setup Subtitles submenu

Once you have chosen a save path and file name, the image can be saved.

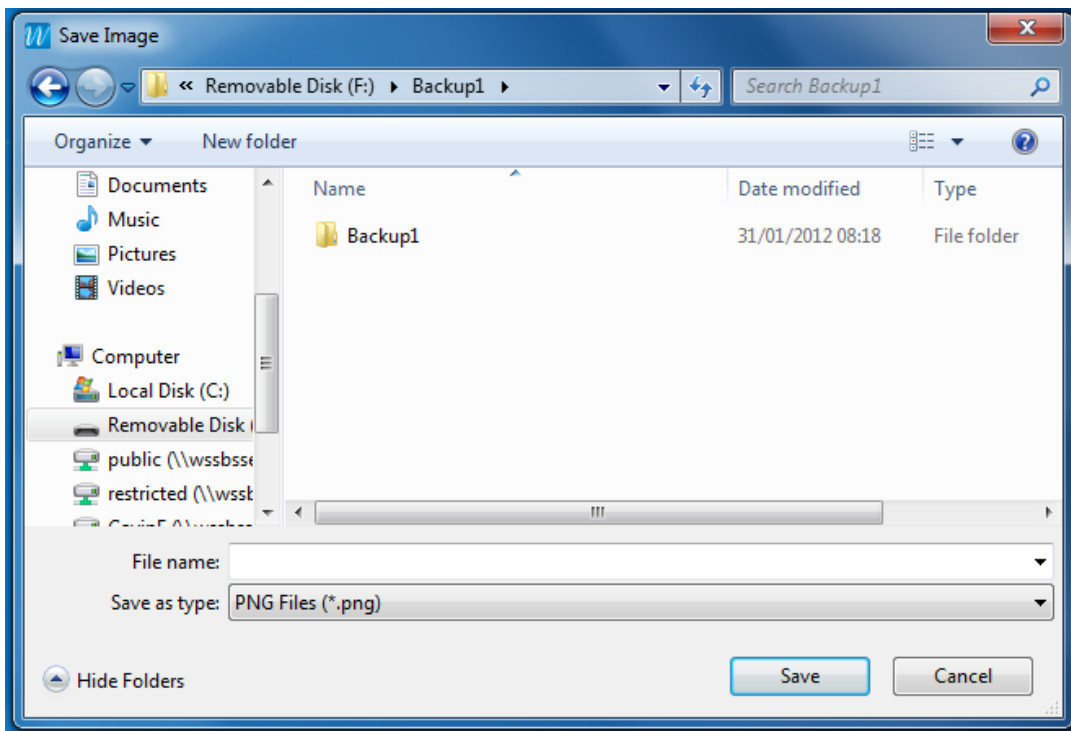


Figure 8.5 Still Image Backup

Section 9 Playing Back Exported Files

9.1 Native Wavestore Format files (.wsb format)

If you have WaveView installed on your PC, click on the desktop WaveView shortcut to launch the software.



Figure 9.1 WaveView Desktop shortcut icon

If you do not have WaveView installed on your PC, you can run WaveView from the media containing the backup file by browsing the folder named WaveView, and double clicking on the file named ‘waveview.exe’.

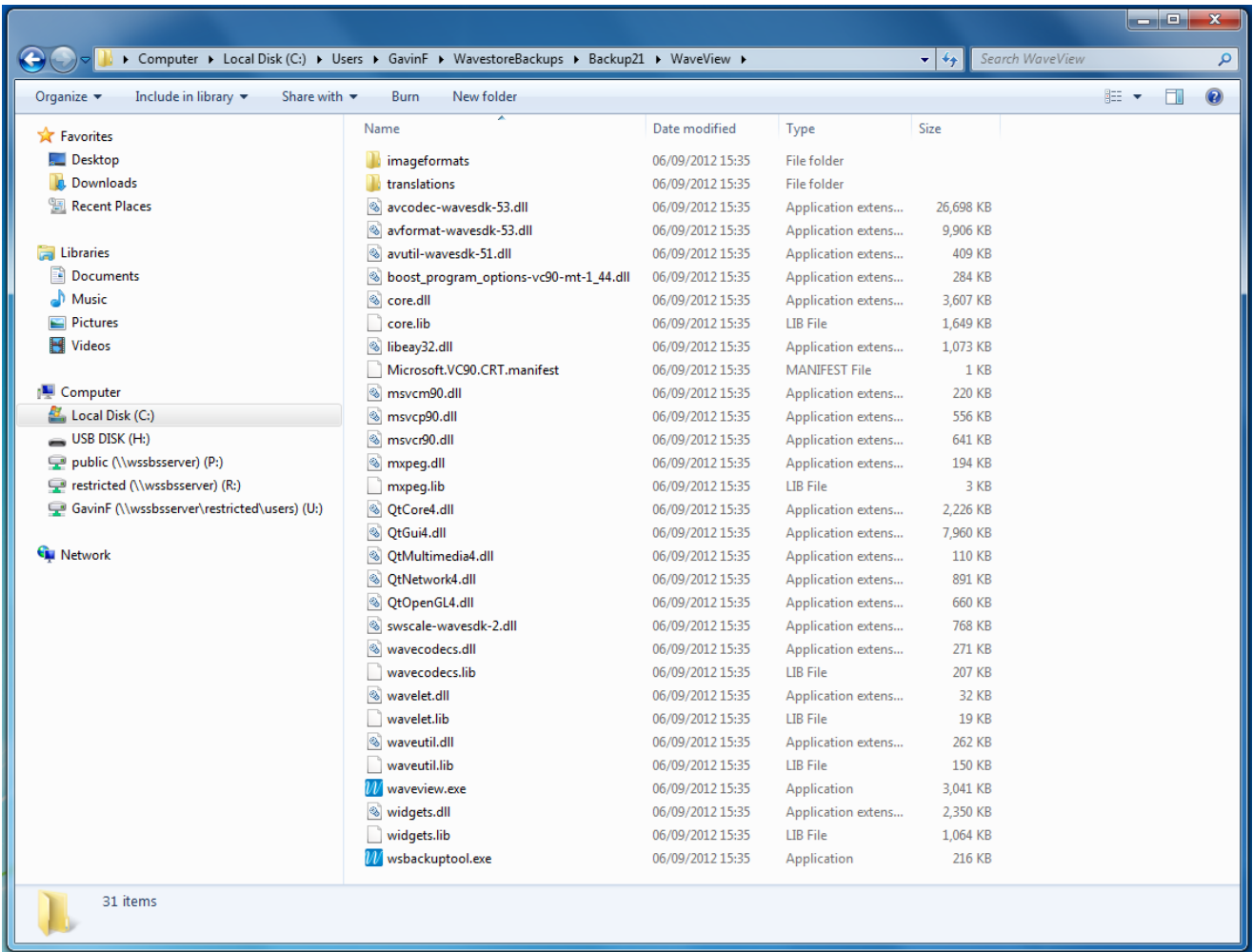


Figure 9.2 Backup media folder containing ‘waveview.exe. program file

The WaveView program screen will now appear as below:

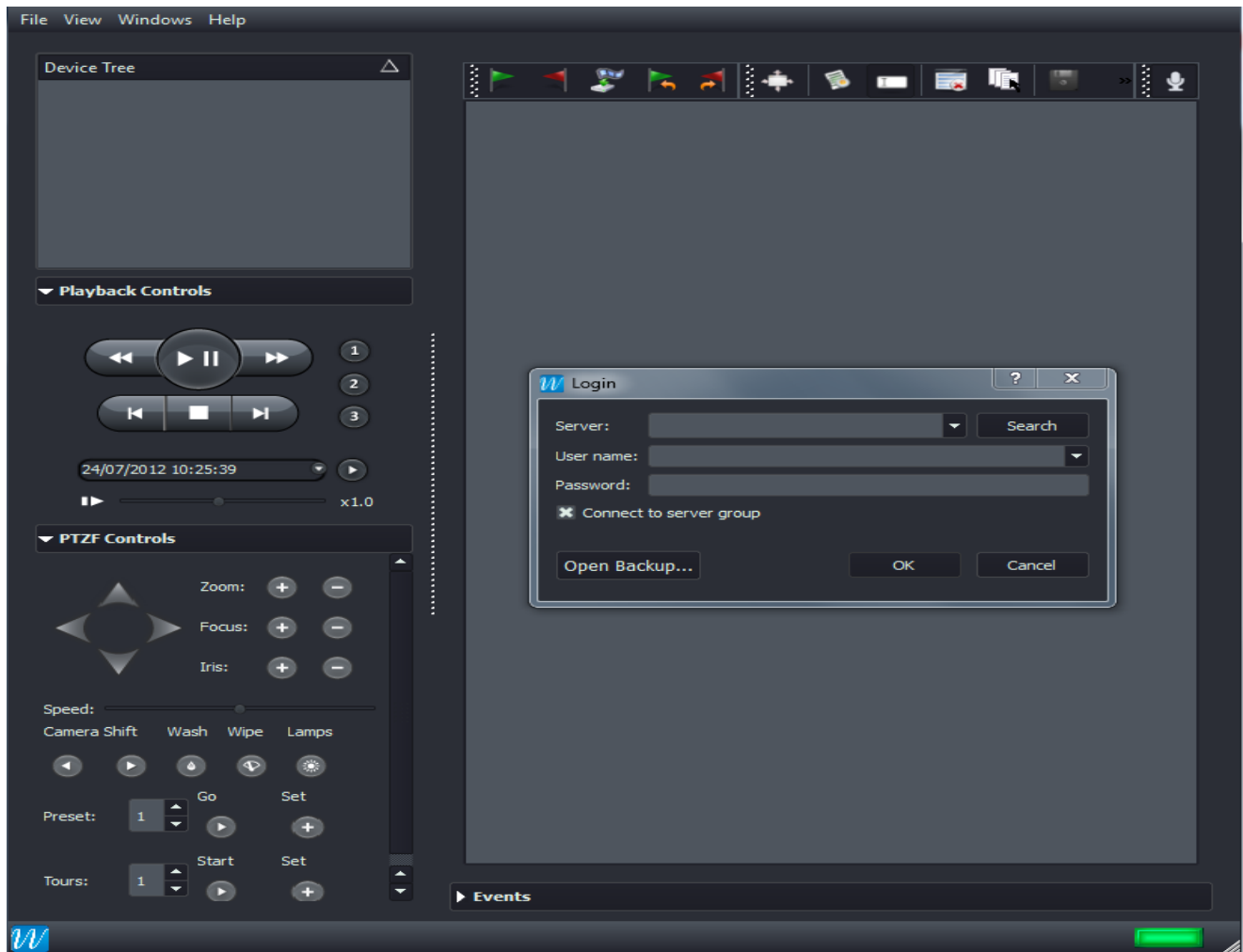


Figure 9.3 WaveView launch screen

Click on the 'Open Backup' icon to close the Login dialogue box, and then follow the menu path *File -> Open*.

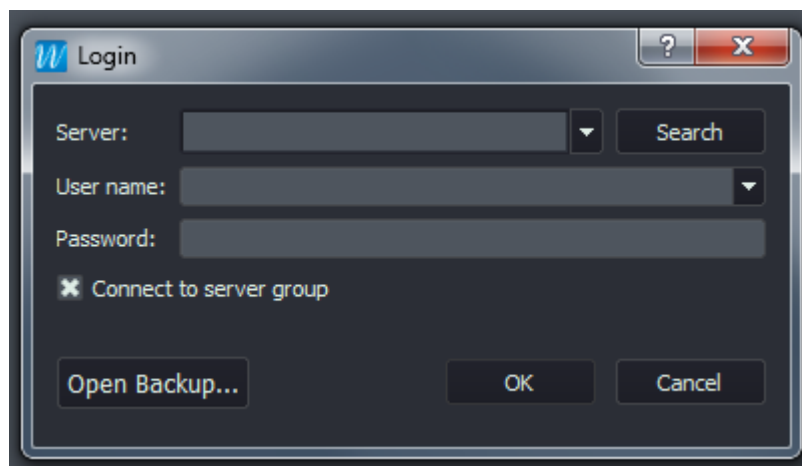


Figure 9.4 Selecting Open from media option

Browse to the folder on your device (local hard drive/CD/DVD/USB stick) containing the backed up files, and click to highlight the required file.

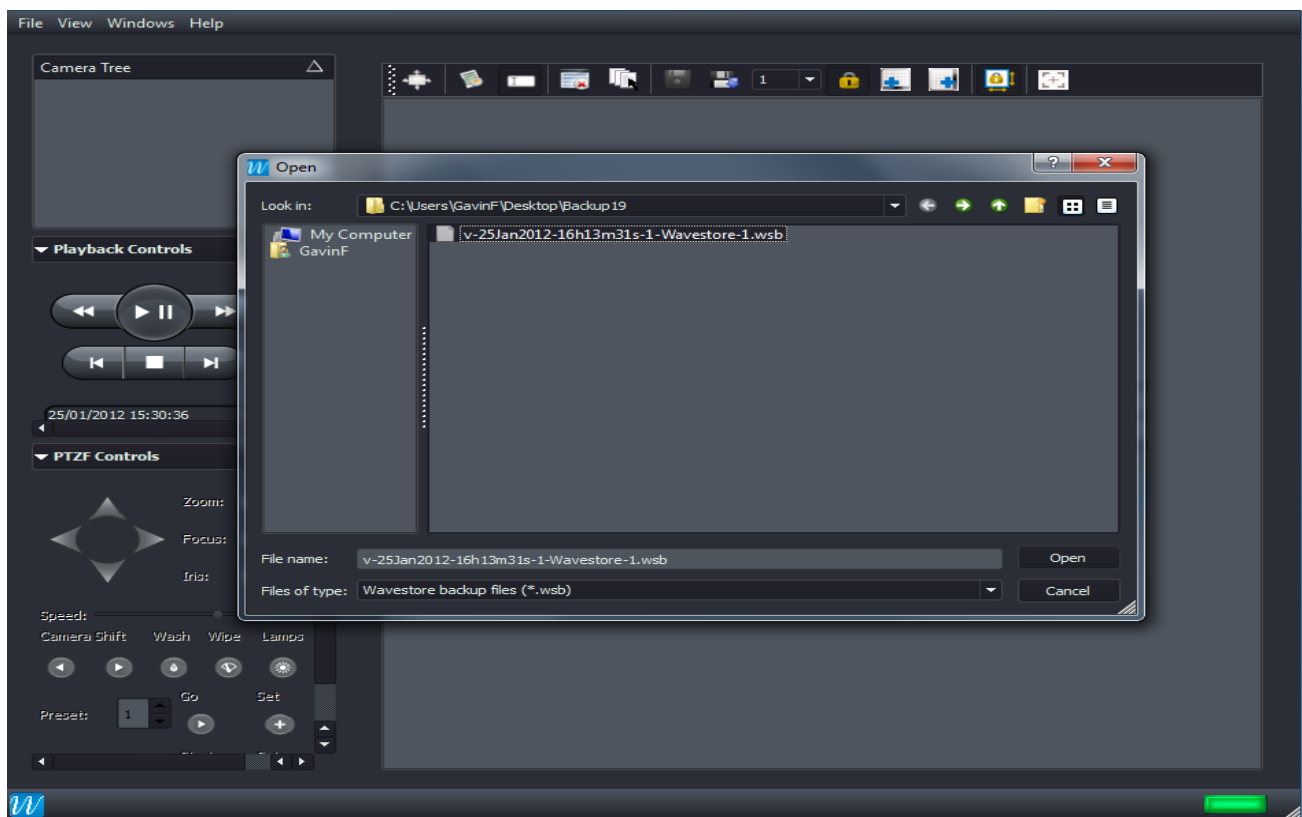


Figure 9.5 Browsing to Backup folder

Highlight the Backup file, and click on 'Open'; you may be prompted to enter a Password, if this option was selected when the backup was created:

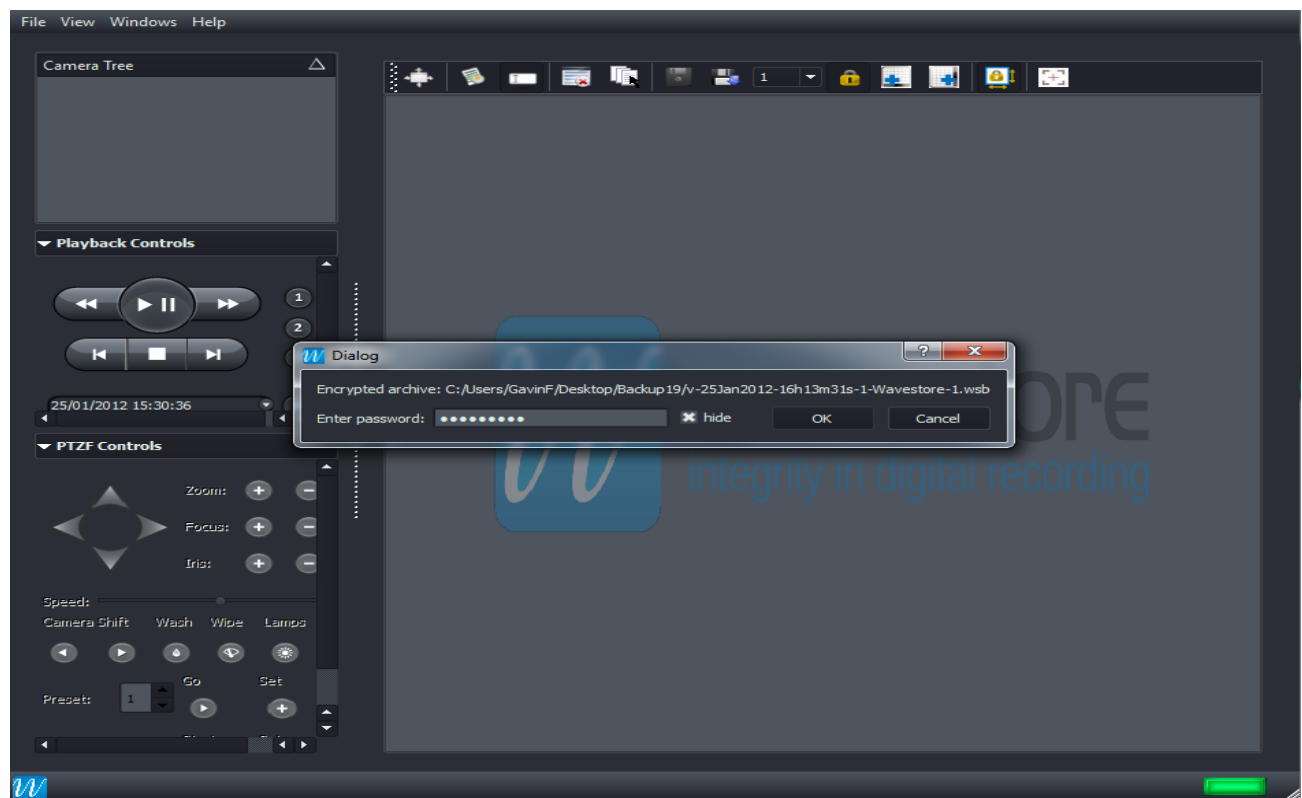


Figure 9.6 Entering Decryption Password

The Wavestore server name and camera channels will now be displayed in the Device Tree section.



Figure 9.7 Device Tree showing camera(s) contained in backup

Double click on the camera(s) that you require; and click on 'Play' to start playback:

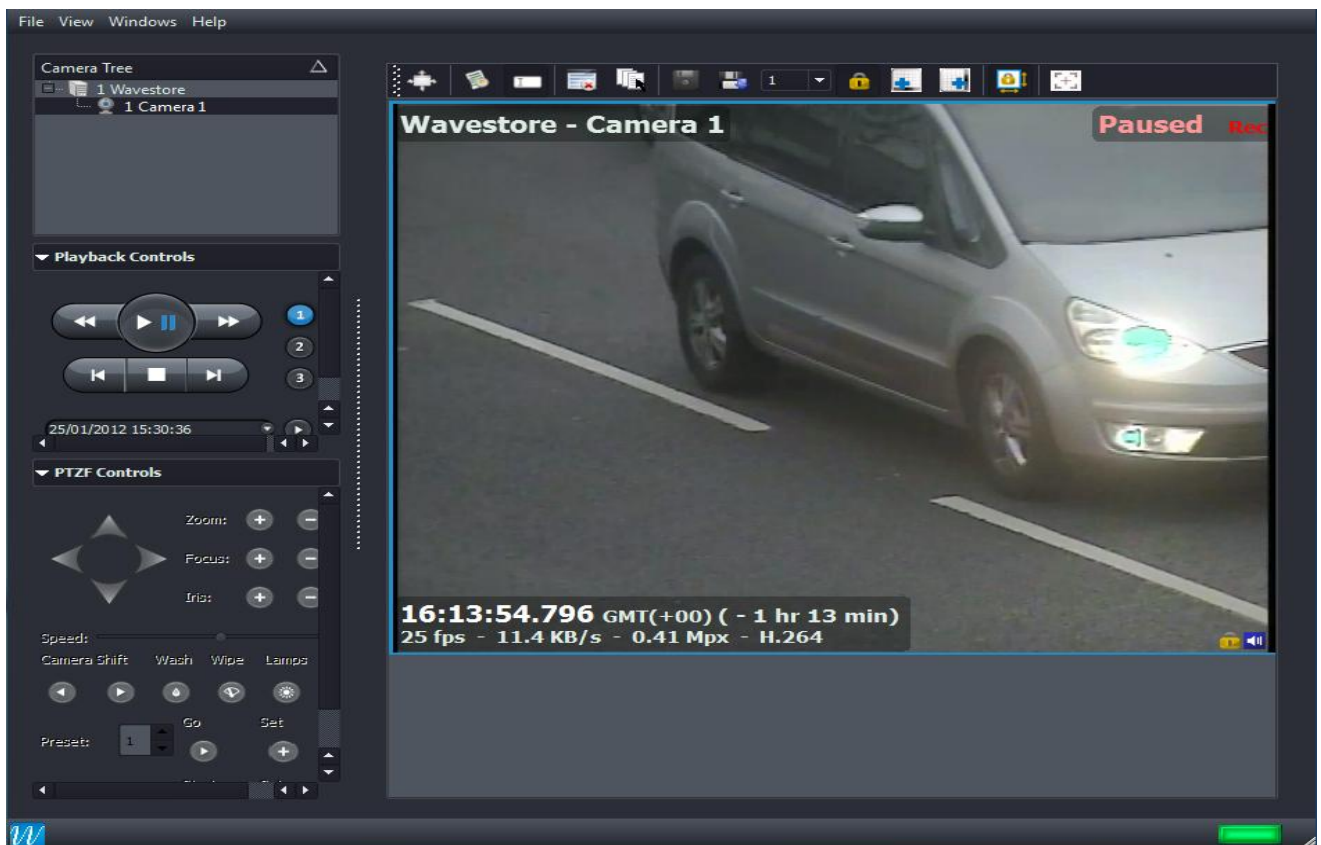


Figure 9.8 Playback of backup file

The Playback controls can be used described in the Search/Playback section (Section 5) earlier to control playback of the footage, create further backup files and save still images.

9.2 Alternative File Formats

There are many playback programs available such as VLC and Windows Media Player, which can be used to playback files that have been exported using an alternative format (e.g. AVI).

Compatibility should first be checked on the Internet.

Section 10 Technical Support

10.1 Frequently Asked Questions

I connect my monitor to the Wavestore server and watch the server boot normally but, the final screen is not viewable i.e. either a black or very noisy picture.

Once the server has completed booting up, press CTRL + ALT + BACKSPACE to reconfigure the output resolution.

I connect and switch on the Wavestore server, but nothing is displayed on the monitor.

Does the Wavestore server 'beep' after it is powered up? If not, there may be a hardware failure within the server.

I have multiple Wavestore servers networked together and I'm viewing cameras on a remote client PC. The screen text displays 25ips, but sometimes the actual displayed rate seems to be lower than this?

This is likely to be due to network bandwidth limitations, if several remote clients are connected to the Wavestore server. As a consequence, the camera images displayed by the remote clients are refreshed less frequently.

A user can view a lower resolution video stream for that camera, by selecting this from the Video Toolbar, as described in Section 3.6.

10.2 Further Assistance

Before contacting your installer, please note the serial number of your Wavestore server (Wxxxx). This will be located on a white label on the front or rear panel of the server.

In order to resolve certain issues, it may be necessary for Wavestore staff to log into the Wavestore servers remotely via an external internet connection.