SALIENT SCIENCES

VFCAPTURE USERGUIDE

Version 6.0

Documentation Version 6.0.2016.07.21

CONTENTS

CHAPTER 1

INTRODUCTION AND TUTORIAL

Salient Sciences is a leading provider of imaging software and training. VideoFOCUS software is used by media, law enforcement and military customers around the world. It provides all the features you'll need to get superior results from video.

HIGHLIGHTS:

- Digital capture: Whether the source of your video is a DVR player or streaming video off the web, VFCapture will capture it.
- Speed and simplicity: VFCapture is easy to use and install. The intuitive software, with a friendly graphical user interface, requires no specialized training.
- Portability: VFCapture runs on various approved high end personal computers.
- Additionally, it can be run on laptops in the field to capture and work with video data immediately.

USER GUIDE

The user guide provides detailed information about all VFCapture procedures, commands and features. It assumes you have a basic working knowledge of the Windows operating system, including using a mouse, selecting items in menus and dialog boxes, and opening, saving, and closing files. For information about these, please refer to your Microsoft documentation.

VIEWING THIS GUIDE ELECTRONICALLY

This guide is also provided as a Portable Document Format (PDF) file under the Help menu. To view it, you must have Adobe Acrobat Reader installed on your computer.

Note: *Acrobat Reader will automatically install when you attempt to open the user guide for the first time, or you can download it from Adobe.*

The PDF version of this guide includes hypertext links to help you move quickly to related points in the guide or to the Salient Sciences website. Hypertext links are displayed as underlined text.

SAMPLE MOVIES

The sample movies provided with VFCapture allow users to get a head start exploring the features demonstrated in the tutorial presentations. Once a sample movie is selected it will appear in the VFCapture application window. Sample movies can be deleted at any time and reimported from the Help menu, as needed.

- Quad: This is an example of a four camera video, divided into quadrants. Users can crop and resize the quadrants.
- Gates: contain an audio track. VFCapture supports import, export and editing of media files containing audio.

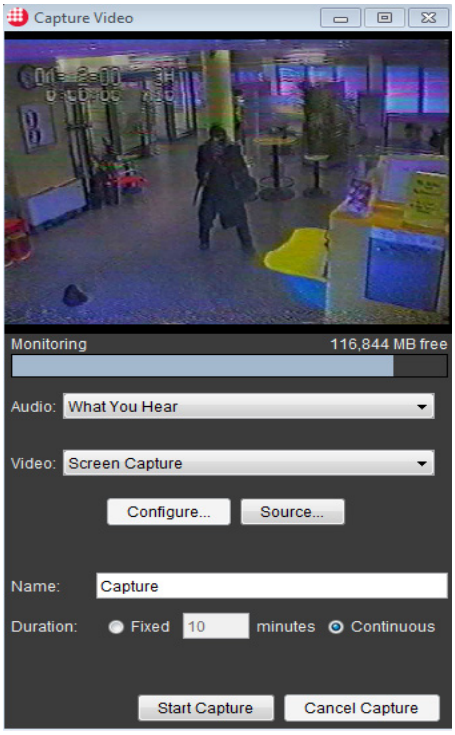
VFCAPTURE: A QUICK TOUR

This tour gives you a quick overview of the basic commands and features of VFCapture. Take a look at the following sections for an overview of how to acquire and process video, or skip ahead to Chapter 2 to start capturing video.

1. Capturing and Importing Media
2. Exporting Session Movies
3. Setting Preferences

CAPTURING MEDIA

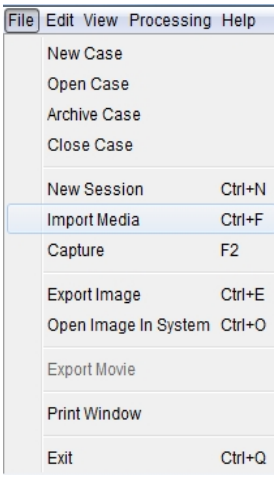
VFCapture digitizes video signals from any source window playing video on the desktop. Use the Capture panel to name the captured clips and to start and stop capturing. See Chapter 2 for details on capturing video.



Video Capture Panel

IMPORTING VIDEO & STILL IMAGES

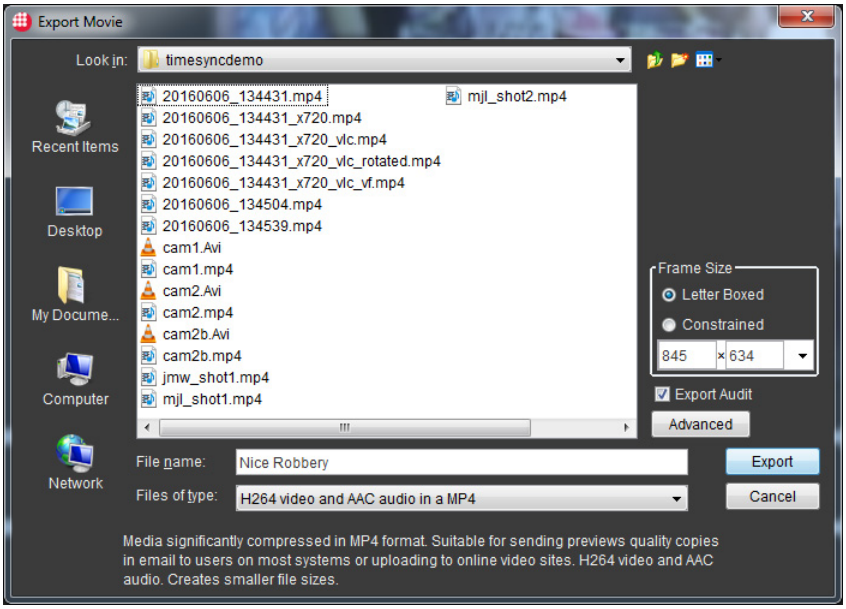
VFCapture can import many proprietary DVR formats as well as standard video formats such as Quicktime, Windows Media, AVI, MPEG and many others. It can also import a wide variety of still image formats. See Importing Video & Still Images for details on importing video.



Import Media Menu

EXPORTING SESSION MOVIES

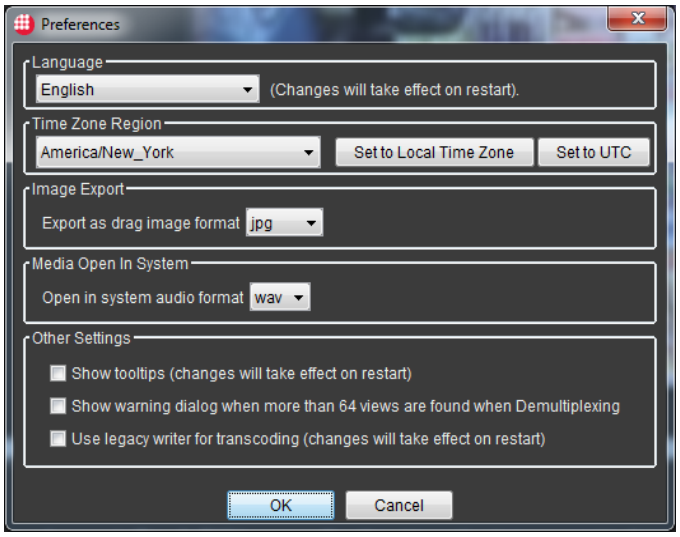
When you have finished processing your videos, you can export them in the format of your choice. See Chapter 5 for more information about exporting session movies.



Export Session Movie Panel

SETTING PREFERENCES

The Preferences dialog allows you to set application-wide settings, such as language, time zone and media format settings.



CHAPTER 2

ORGANIZING, CAPTURING & IMPORTING MEDIA

OVERVIEW

VFCapture allows you to organize your movies and videos into collections called *Cases*. It is easy to open and close casesand archive them for later use

VFCapture can capture digital video from proprietary video players or online media players where a file is not readily available. VFCapture can also import movie files stored in standard file types, VFCapture includes the Video Format Converter plugin which provides extensive support for a wide variety of media formats and codecs. It provides VFCapture with the ability to import video with accompanying audio from a wide range of media file types, including some proprietary DVR formats.

WORKING WITH CASES

Cases are the way you can organize your videos into a group related to a particular project. Upon launching VFCapture you will need to make a case into which you can capture or import media. You can close and open them at any time.

To create a new case

1. Choose *File-> New Case*
2. Give the file a name then hit the button *Create*

To open a case

1. Choose *File -> Open Case*
2. Navigate to the Directory where your Case is stored.
3. Select the case the hit the button *Open*

DEFAULT LOCATION OF CASES

Cases are collections of videos that are stored on the VFCapture machine and are easily retrievable by the application for further use. The location of the Cases that are created and stored by VFCapture can be found in the Preferences Dialog.

To find the location of your Cases Directory

1. Choose *Edit -> Preferences*

Each of the Cases is a named directory stored on disk.

Note: *Cases can reside anywhere on the hard disk. The default directory is where* VFCapture *stores newly created cases within the application.*

ARCHIVING OF CASES

You may further archive your Case into a ZIP file for easy sharing and storage. In order to restore this data into VideoFOCUS, you must unpack the zip file into a directory. This directory will be seen by VideoFOCUS as a Case

To archive a Case

1. Choose *File->Archive Case*

2. Select a location

3. Name the Case

4. Hit *Save*

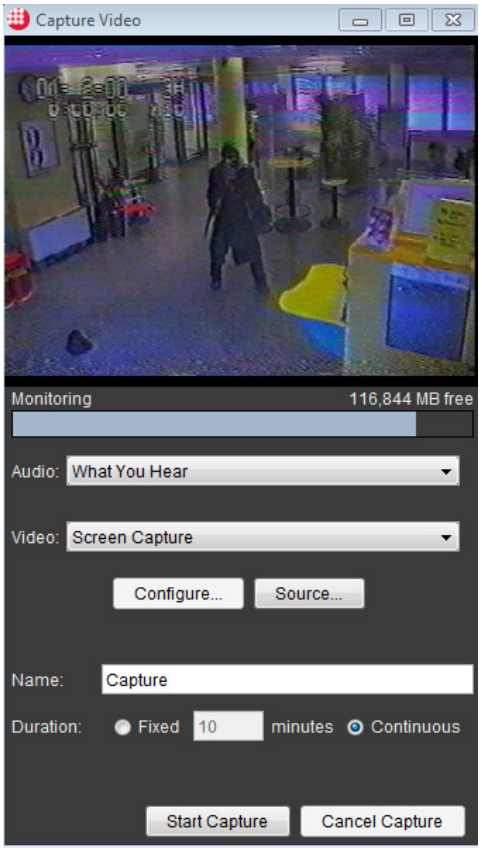
RESTORING ARCHIVES FOR USE IN VIDEOFOCUS

In order to restore archived Cases into VideoFOCUS, you must unpack the archived ZIP file into a directory. This directory will be seen by VideoFOCUS as a Case. Once the ZIP file is uncompressed, follow the instructions on Opening a Case.

CAPTURING VIDEO

Users can capture from a video player via **Screen Capture**. When capturing an incoming video signal, VFCapture digitizes the signal and stores the video on the computer's hard drive. The stored digital video is called a **Capture Session**.

To open the Capture panel, choose File > Capture



Incoming signals are displayed here.

The bar indicates free disk space

Audio lists the sound devices installed. Video lists the video capture devices installed and allows the setup for screen capture.

CAPTURE PANEL INFORMATION

The following table describes the information of the Capture panel.

Capture Video dialog box - Video Status options	
Signal Monitor	This window lets you monitor the incoming video signal. The label below the video signal tells you whether you are “Monitoring” or “Capturing”.
Alert Messages	This area is below the Signal Monitor. If there is not enough free space for your capture session, or no video signal, VFCapture will display an alert message. This area will also indicate other problems with capture such as slow writes to the disk.
Video Summary	The Video Summary Area displays the amount of available disk space. Blue indicates the amount of data currently residing on the drive. Free space is left blank. When capturing, the data being written to disk is shown in red.
Audio Selector	Allows the selection of the audio capture device.
Video Selector	Allows the selection to execute a Screen Capture.
Source	Activates the source window selection window for Screen Capture.
Name	Where a session movie is named before capture.
Duration	Where a user chooses to capture a fixed time in minutes, or to record continuously.
Start/Stop Capture	Initiates and stops a capture.
Cancel Capture	Cancels a capture, eliminating all captured data.

To capture video

1. For screen capture, make sure your video player is open on the desktop and you can visible see the movie you wish to capture.
2. Select the Video device. If you wish to select Screen Capture as your device, see Configuring VFCapture for Screen Capture.
3. Enter a name for your Capture Session in the Session Name field.
4. Choose the duration for your capture (you can manually start and stop the capture process, or you can capture for a fixed number of minutes. The capture will stop after the duration of time specified).
5. Click Start Capture to begin capturing video.
6. Click Stop Capture when you’ve captured the footage needed.
7. Click Cancel Capture if you wish to abort the capture session. The captured video will not be saved.

SETTING THE VIDEO CAPTURE DEVICE

Many digital video recording devices (DVRs) require a proprietary player to display captured video. There is often no way to export a standard video file from these systems. Screen Capture provides a way of capturing this data as it plays on the monitor. Additionally, Screen Capture can be employed to capture streaming video off the web, if desired by choosing the source window to be the Internet browser (Chrome, Mozilla etc.) and selecting the region where the video.

Note: *You may find that various DirectShow and Video For Windows devices appear in the Capture Video Dialog. Some of these devices may work with VFCapture if they produce video sessions in a suitable format. Please contact us for more information on the current list of supported cards - (+1) 919.572.6767 (option 2) or support@salientsciences.com*

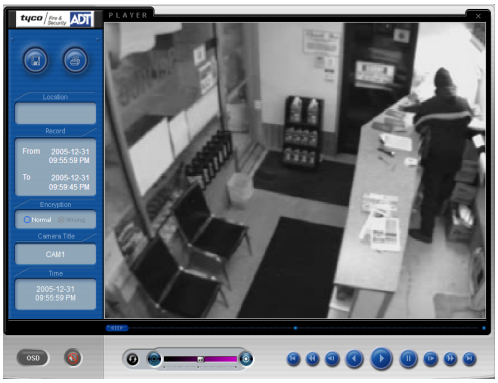
CONFIGURING VFCapture FOR SCREEN CAPTURE

1. Launch VFCapture .
2. After VFCapture is up, launch the proprietary video player or open the window containing your source video.

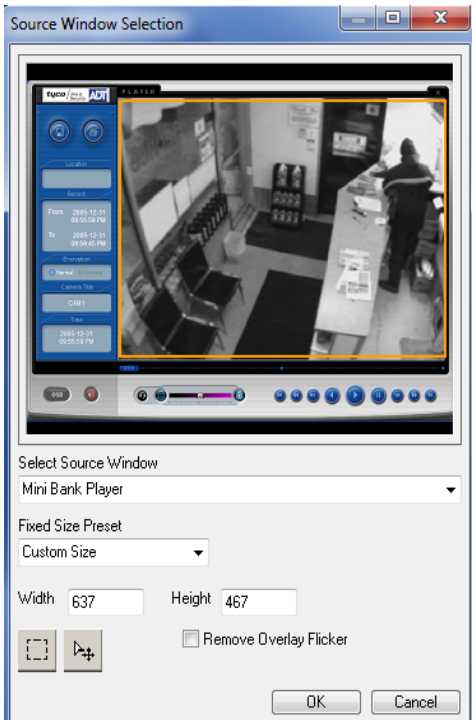
Note: *You may need to install any proprietary players on your computer first. It is recommended that you run the player from your local disk, not the CD drive, as this will ensure optimal performance from the player.*

3. Open the capture panel. Choose Screen Capture in the Device menu and click Source. The Source Windows dialog appears. The drop-down menu lists all the windows present on your desktop.
4. Choose the name of the window you want to capture. Once a window is selected it will be brought to the foreground and display in the source selection window.

Note: *In case a selected window does not display in the source selection window, you may want to decrease the Hardware Acceleration for the computer's graphics card. To do this, exit VFCapture , then go to: Start Menu > Control Panels > Display > Settings tab > Advanced button > Troubleshoot tab, and lower the Hardware Acceleration slider. If you are using Windows Media Player, you can lower the Hardware Acceleration within the player itself by opening: Tools > Options > Performance, and lowering the Video Acceleration slider.*

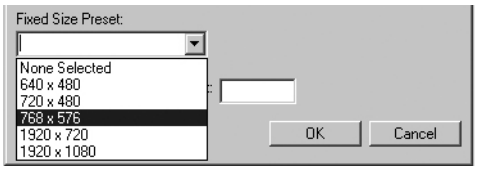


DVR Player Window

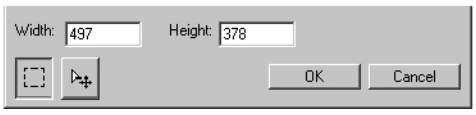


Source Selection in Capture Media Dialog Video Portion is being selected with crop tool

5. Use the crop cursor to select only the video portion of the player (most media player windows are comprised of video displayed within a console). Additionally, you may choose a preset pixel size from the drop-down menu or manually enter a custom size using the pixel height and width text fields. If you wish to move the crop box, select the arrow tool to drag it.



Preset Pixel Sizes



Pixel fields and Crop Tools

6. If there is timecode overlaying the video, you may want to select the Remove Overlay Flicker checkbox. This will help ensure that the timecode remains visible at all times in the captured video.

7. Select an Audio Source.
8. Click OK and the selected portion of the source window is displayed in the capture panel.
9. Activate the player to play the desired video segment. Click Start Capture to begin capturing video data. If the player occupies the full screen, the capture panel will go to the background, ensuring no overlap of the target window.
10. Click Stop Capture when you wish to end the capture session.

Double-clicking the VideoFOCUS icon that appears in the lower right corner of the screen will stop video capture.

11. The captured video will appear in the Captured and Imported Sessions list.

CONFIGURING A SOUND CARD FOR ANALOG OR SCREEN CAPTURE

VFCapture will capture audio, in addition to video, if a built-in or approved 3rd party sound card is properly configured. Please contact us for more information on the current list of supported cards - (+1) 919.572.6767 (option 2) or support@salientsciences.com

IMPORTING MEDIA FILES

VFCapture can import most video formats that open in Quicktime or Windows Media Player. Additionally VFCapture can import singe image files or a collection of sequential image files..

Some, but not all, of the supported image and video formats that VFCapture supports include the following:

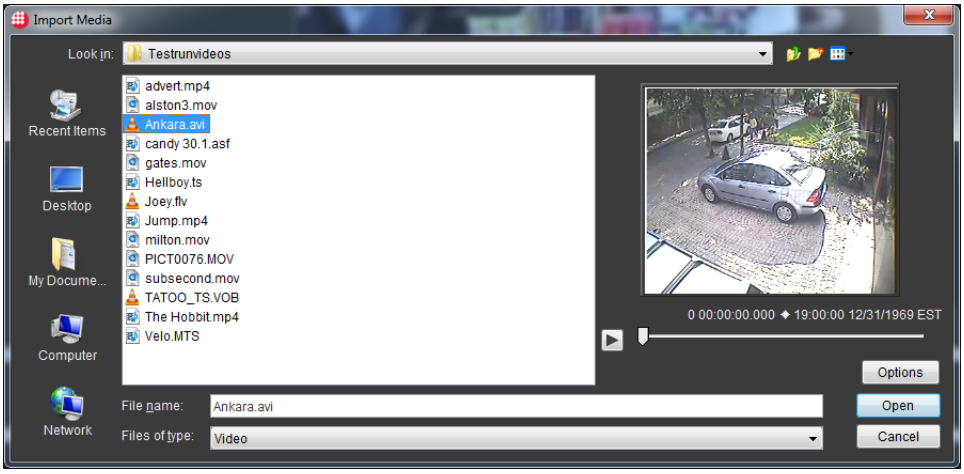
Format	Description
QuickTime (.mov)	Video file format developed by Apple Computer.

Format	Description
Windows Media (.asf, .asx, .wmv, .wm)	Developed by Microsoft for streaming and playing back media files, consists of: Advanced Streaming Format (ASF), Active stream redirector (.ASX) Windows Media Video (WMV), Windows Media (WM).
AVI (.avi)	Audio Video Interleave, a Microsoft format for digital audio and video commonly produced by digital video recorder (DVR) systems.
MPEG (.mpeg, .mpg, .m1v, .m2v)	Includes MPEG-1 and MPEG-2 formats. MPEG-1 is a low-resolution format widely used on the Internet. MPEG-2 is a higher resolution format, most commonly used for DVD.
MPEG-4 (.mp4, .m4v, .mp4v)	Designed to transmit video and images over a narrow bandwidth, the current primary use for MPEG-4 video is Internet streaming media.
Indeo (.i)	A high compression format developed by Intel, commonly used for CD-ROM production.
DivX (.divx)	A popular compression format based on MPEG-4. DivX files can be downloaded over high-speed lines in a relatively short time with minimal loss of video quality. Often used to exchange video files on the Internet.
DV (.dv)	Digital Video (DV) defines both a compression and a tape format. It is popular for consumer and semiprofessional video production.
VOB (.vob)	Short for Video Object. A DVD file that contains the actual Video, Audio, Subtitle and Menu content.
3G Mobile (.3g2, .3gp)	A low-quality format used in mobile phones to store audio/video files.
Various DVR Proprietary Formats	Supports various DVR formats.

TO IMPORT MEDIA FILES

1. Select File > Import Media. "All Files" is the default file type selection. If you wish to narrow your search to either Video, Images or Audio, select it in the file type drop down. Navigate to and select the file you wish to import.

The Import Media Dialog provides a Visualization Window that allows the viewer to review the video before import.



Note: *One or a series of videos can also be imported into the application by dragging them from the Desktop.*

TO IMPORT DVR FILES

1. Select File > Import Media.
2. Choose All Files from the file type drop down.
3. You may wish to modify the Accept drop down to narrow the type of media you wish to import from the DVR file.
4. Navigate to and select the file you wish to import.

Note: *When importing a DVR file with multiple camera views, it will produce multiple sessions.*

SETTING VIDEO ATTRIBUTES ON IMPORT

VFCapture will allow you to change the attributes of a video via the **Movie Attributes Dialog**.

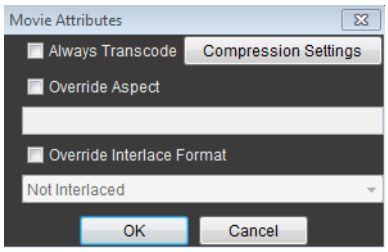
Transcoding

Certain video formats may require transcoding before they can be imported. Transcoding is a process by which the original video is copied and converted to a format that VFCapture can more readily work with. Typically, file formats that may require transcoding are streaming formats (.asx, .asf, .wmv) that do not display video frames unless the clip is playing. This can cause problems if the user wishes to browse through the video frames at random. Transcoding is a way of creating a non-streaming copy of the original video.

To Transcode a Video File

1. Select File > Import Media.

2. Navigate to and select the video file you want to import.
3. Select the Options button which will open the **Movie Attributes Dialog**. Click on the **Compression Settings** button, which contains a list of compression formats.



Note: *The default compressor is None, which uses no compression when converting the file. This setting is preferred if you wish to maintain the quality of the original video, but may result in large files if the original video is several minutes long. In that event, any compressor can be selected from the list to create a smaller file.*

4. Click OK to close the Movie Attributes Dialog.
5. Click Open in the Import Media Dialog. The transcode progress bar will appear. Once the transcode is complete, the file will appear in the session list.

Always Transcode Videos
If you wish to always transcode videos with a particular setting on import, click the **Always Transcode** checkbox . The videos will be transcoded with the current settings set in the Compression Settings Dialog.

Override Aspect
The Override Aspect Field allows the user to override the current aspect ratio. Please enter values in the form X:Y where X is the width and Y is the height.

Override Interlace Format
Some video may have the incorrect aspect ratio set or it may not be defined at all. If you know the interlace of the video, you can set it in the Override Interlace Format pulldown menu. Options are

- Not Interlaced
- Interlaced (Even)
- Interlaced (Odd)

IF YOU CAN'T IMPORT A VIDEO FILE

- The CODEC required by the video file must be installed on your computer to decode, or play the file. If the codec is not installed, an error will result if you try to play or import the file. You may be able to locate the codec associated with a particular video format on the Internet. Many video and DVR developers provide copies of necessary codecs on their websites for download. Before installing the codec, exit VFCapture then try the import procedures again.

CHAPTER 3

BROWSING CAPTURED AND IMPORTED SESSIONS

Video can be brought into VFCapture hrough various methods: , by screen capturing from digital media players, by importing self-contained media files, such as those encoded as Quicktime (.mov) Windows Media (.wmv) or AVI (.avi) . The import process can also be initiated by a drag & drop or copy & paste action into or within VFCapture Videos reside in the **Captured and Imported Sessions** pane in VFCapture.

When you acquire video, VFCapture automatically displays it in the **Captured and Imported Sessions** pane.

SESSION INFORMATION

As sessions are acquired, the left column of the window becomes a scrollable list. To select a session, simply find it in the list and click on it. When it is selected, a orange highlight will appear and the video will be displayed in a movie player, in the right panel of the window.

Because each session can be unique, session names and creation dates are always displayed in the list, in addition to other information. The following table describes the items displayed in the session list.

Session Information	
Session Name	The name of the capture session.
Session Length	The length of the capture session in minutes and seconds.
Created Date	The date and time the capture session was captured or imported.
Audio Format	The sample rate and number of channels of audio.
Interlaced	The interlace status of the movie. “Odd” means the session is field interlaced with the odd field dominant. “Even” means the session is field interlaced with the even field dominant. “Not Interlaced” means the session is not field interlaced. “Field Dominance” refers to which field is used to begin or end a segment of video.

BROWSING VIDEO

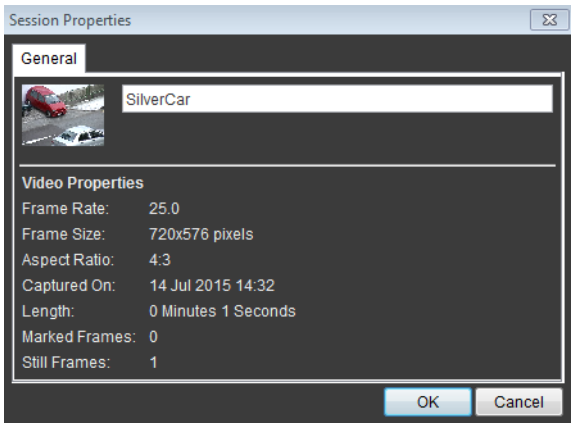
Once a session is selected, users can view it as a movie.

A movieplayer displays for a selected session.

VIEWING SESSION PROPERTIES

To view session properties

1. Select a session. Choose Edit > Session Properties.
2. This will open the Session Properties window.



RENAMING SESSIONS

To rename an existing session

1. Select a session. Choose Edit > Session Properties.

2. In the Session Properties window, enter a new name, click ok.

EXPORTING CAPTURED AND IMPORTED SESSIONS

Any session can be exported as an AVI (.avi), QuickTime (.mov) or Windows Media (.wmv) file. See Chapter 5 for more information.

DELETING SESSIONS

If you are running out of space on your video drive, you might need to delete some sessions. When you delete a capture session, it is important to understand that you are deleting everything associated with it, including marked frames and still frames.

Note: *Exported stills or videos derived from a session are not affected if it's deleted.*

To delete a session

1. Select a session in the Browse Video window. You can also shift-select a group of sessions, if you wish to delete more than on at a time.
2. Choose Edit > Delete Session.

To Delete All Related Sessions

Many times sessions reference data from one another. For example, if a mulitplexed video is digitized and then demulitplexed, any number of saved "views" from this session will reference the original mulitplexed movie. Additionally, filtering, editing, or other modifications the can create a session that is not self-contained at all, but

merely references the original video data. The idea behind Select All Related Sessions is to find any file that references the underlying media on the hard disk. This is a sure way of clearing off space when many sessions reference the same media file and it's not obvious to the user which session is the original.

Note: *Once the media file of a session is deleted from the hard disk it can't be restored, unless it was an imported file to begin with and resides elsewhere, rather than the VFCapture movie storage directory.*

1. Select a session.
2. Choose Edit > Select All Related Sessions. All related sessions will be highlighted.
3. Hit the Delete key to delete all the selected sessions.

CHAPTER 4

PROCESSING SESSIONS

Any video in VFCapture can be processed. Processing can be applied to an entire video, selected from the Captured and Imported Sessions window. The items listed under the Processing menu that will be dealt with in this section are **Modify and Demultiplex** .

MODIFY

The Modify menu contains various operations that can be applied to sessions. The following tables describe the options in the Modify panel.

Modify - Spatial Properties	
Crop Frame	Allows the user to crop the video to any size. The crop marquee initially appears constrained to the aspect ratio of the original frame but can be resized freely by dragging the corners.
Change Aspect Ratio	Allows the user to correct or change the aspect ratio of a video or still image.
Change Frame Size	Allows the user to change the frame size of a video, while preserving the original height and width ratio.
Rotate Frames	Allows the user to rotate a video by a specified amount. Negative values are allowed.

Modify Options - Temporal Properties	
Force Uniform Frame Rate	Allows the user to assign a new frame rate to the video (the frame-rate of the original file is not affected). This is a useful feature for speeding up or slowing down the motion of any kind of video file or standardizing the frame rate of a time-lapse video.
Change Speed	Allows the user to alter the speed of a clip by entering a percentage value above or below the value of its current speed. Entering a negative number will play the clip in reverse.

Split Fields Into Frames	Splits the two fields comprising each video frame into their own individual frames. This option is useful for video that has been field multiplexed or in any situation where there is a very large disparity between fields.
Force Interlace Format	This is used to reassign the interlace status of a video. This may need to be done with imported videos which have the incorrect field dominance assigned.
Self-Contained	This forces the new session data to be written to a self-contained file, rather than to a file referencing to the original.

MODIFY - SPATIAL PROPERTIES

Spatial options are available when modifying video. Videos are stored in the Captured and Imported Sessions window.

CROP FRAME

If you are working with surveillance video that is divided into four quadrants, cropping can isolate each quadrant. Or, in the case of a still image, you can crop out any non-essential details.

To modify a session by cropping

1. Select a video from the session list.
2. Choose Processing > Modify
3. Choose the Crop Frame checkbox
4. Position and scale the marker to the area of the frame that you want to crop (placing the cursor in the middle of the crop box will position it, and placing it on a corner will scale it).
5. Name the modified session.
6. Click Create Session. Modified videos will appear in Captured and Imported Sessions window.
7. You may create more than one cropped video from an original.
8. When done, click Done to exit the Modify panel.

CHANGE ASPECT RATIO

Aspect Ratio refers to the ratio of width to height of a picture. Standard definition television screens use a 1.33:1 aspect ratio (also known as 4:3). High definition television use a 16:9 (or 1.78:1) aspect ratio, which is a wider picture, similar to what is seen in a movie theater.

To modify a session by changing the aspect ratio

1. Select a video from the session list.
2. Choose Processing > Modify
3. Choose the Change Aspect Ratio checkbox (the current aspect ratio values will appear).
4. Enter a new value to either text field.
5. Name the modified session.
6. Click Create Session. Modified videos will appear in Captured and Imported Sessions window.
7. Click Done to exit the Modify panel.

CHANGE FRAME SIZE

Changing the frame size is a way of altering the pixel dimensions of a video. When entering a new height or width, the other value changes accordingly to preserve the original height to width ratio. To modify a session by changing the frame size. Typically this is only done on export to fit the movie to a particular needed format.

1. Select a video from the session list.
2. Choose Processing > Modify
3. Choose the Change Frame Size checkbox (the current height and width values will appear).
4. Enter a new value to either text field.
5. Name the modified session.
6. Click Create Session. Modified videos will appear in Captured and Imported Sessions window.
7. Click Done to exit the Modify panel.

Note: *The* ***Constrain Pixel Shape*** *checkbox will retain the current relative dimensions of the original object.*

ROTATE FRAME

Rotate frame will rotate the movie or image by the specified degree amount. Please note that negative values are allowed.

To modify a session by rotating the frame

1. Select a video from the session list.
2. Choose Processing > Modify
3. Choose the Rotate Frame checkbox .
4. Enter a degree value for rotation (negative values are allowed)
5. Name the modified session.
6. Click Create Session. Modified videos will appear in Captured and Imported Sessions window.
7. Click Done to exit the Modify panel

MODIFY - TEMPORAL PROPERTIES

FORCE UNIFORM FRAME RATE

This assigns a new frame rate to the video (the frame-rate of the original file is not affected). This is a useful feature for speeding up or slowing down the motion of any kind of video file or standardizing the frame rate of a time-lapse video.

To modify a session by forcing a uniform frame rate

1. Select a video from the session list.
2. Choose Processing > Modify.
3. Choose the Force Uniform Frame Rate checkbox.
4. The original frame rate is displayed. Raise the frame rate to speed up a clip. Lower the frame rate to slow it down.
5. Name the modified session or still image.
6. Click Create Session.
7. A new session will be created with the designated frame rate.
8. Click Done to exit the Modify panel.

CHANGE SPEED

This changes the speed of a video by entering a percentage value. For example, entering a value of 50% will slow the video to half its original speed, while entering a value of 200% will speed it up twice as fast. Use a negative number to play the video in reverse. While the speed of the video is changed, the frame rate of the video is not affected, as when using Force Uniform Frame Rate.

Note: *When changing the speed of a video containing an audio track, the audio is not scaled with the video. The audio is muted in speed and frame rate adjusted videos.*

To modify a session by changing speed

1. Select a video from the session list.
2. Choose Processing > Modify.
3. Choose the Change Speed checkbox.
4. The original percentage rate is displayed.
5. Raise the percentage rate to speed up a clip, or lower the perentage rate to slow it down.
6. Name the modified session or still image.
7. Click Create Session.
8. A new session will be created with the designated percentage rate.
9. Click Done to exit the Modify panel.

SPLIT FIELDS INTO FRAMES

Analog video frames are comprised of two interlaced video fields. The ghosting effects of field interlacing may not be obvious except when rapidly moving objects have been caught on video, or if a video has been field multiplexed. Splitting each field into a separate video frame can eliminate this effect, making the video easier to work with. See the section on Deinterlacing for a more detailed discussion of field interlacing.

To modify a session by splitting fields into frames

1. Select a video from the session list.
2. Choose Processing > Modify.
3. Choose the Split Fields into Frames checkbox.
4. Name the modified session or still image.
5. Click Create Session.
6. A new session will be created with the fields split into frames.
7. Click Done to exit the Modify panel.

FORCE INTERLACE FORMAT

On rare occasions when analog video is imported (most digitally derived media is not field interlaced) an incorrect field dominance may be assigned. This option is available to correct that, in necessary.

To modify a session by forcing the interlace format

1. Select a video from the session list.
2. Choose Processing > Modify.
3. Choose the Force Interlace Format checkbox.
4. Choose one of the three options (if you don’t know the correct format, you may have to try more than one to get it right).
5. Name the modified session or still image.
6. Click Create Session.

7. A new session will be created.
8. Click Done to exit the Modify panel.

MODIFY - AUDIO PROPERTIES

These options are only available when modifying video with audio or an audio session. They are not present when modifying still images or a video session without audio.

SYNC ADJUST

This adjusts the selected audio channel's start time. This is useful to correct synchronization issues between the audio and video playback.

To modify a session with Sync Adjust.

1. Select a video or audio session from the session list.
2. Choose Processing > Modify
3. Choose Audio Properties.
4. Check one or more of the channel boxes under Sync Adjust.
5. Adjust the start time.
6. Name the modified session.
7. Click Create Session. Modified videos or audio sessions will appear in Captured and Imported Sessions window. Click Done to exit the Modify panel

CHANNEL SELECT

This allows an audio channel to be either retained (selected) or removed from the video session.

To modify a session with Channel Select.

1. Select a video or audio session from the session list.
2. Choose Processing > Modify
3. Choose Audio Properties.
4. Check to remove one or more of the channel(s) under Channel Select.
5. Name the modified session.
6. Click Create Session. Modified video or audio sessions will appear in Captured and Imported Sessions window. Click Done to exit the Modify panel

CHANNEL MIX

This allows you to either create a Mono (50/50) mix of all the audio channels or a Stereo balanced mix. The Stereo balance mix is useful when the level of one channel is lower than the other and needs compensation.

To modify a session with Channel Mix.

1. Select a video or audio session from the session list.
2. Choose Processing > Modify
3. Choose Audio Properties.
4. Check the Stereo Balance box and make your slider adjustment or check the Mono box.
5. Name the modified session.
6. Click Create Session. Modified video or audio sessions will appear in Captured and Imported Sessions window. Click Done to exit the Modify panel

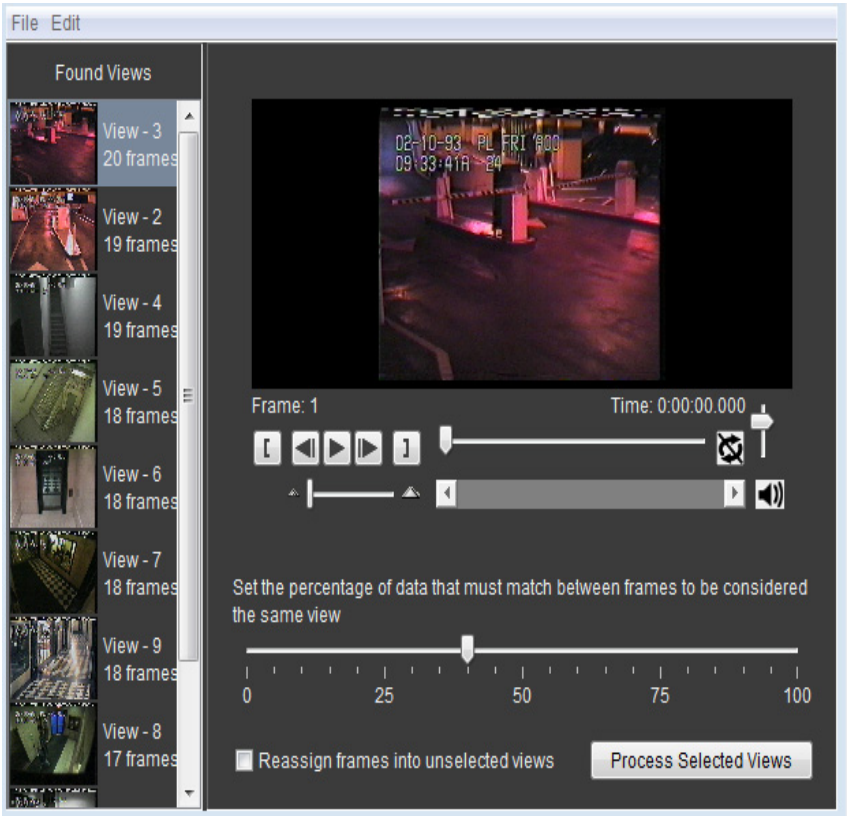
DEMULTIPLEX

Multiplexed video is often a compilation of rapidly changing camera views. Additionally, camera views may be allocated to separate video fields, resulting in frames with mismatched, overlapping images. The Demultiplex feature uses a pixel-matching algorithm to sort through multiplexed camera views and organize them into individual video streams. After this process, these views can be reviewed, edited and saved.

To demultiplex a session

1. Select a multiplexed video from the session list.
2. Select Processing > Demultiplex
3. Hit Process Selection

While processing, a pixel-matching algorithm compares and matches the pixels among every frame in the video. The results are displayed in the Found Views list. The number of found views are dependent on how successful the pixel matching algorithm is distinguishing one frame from another. Anomalies such as tape static, noise or camera panning can sometimes cause more views to appear than are actually present on the tape. These problems can be corrected, or compensated for, however. See Strategies For Demultiplexing for more information.



Found Views are displayed in a list. The views can be selected, reviewed in the movie player, and edited before being saved.

DEMULTIPLEX PANEL

The following table describes the items in the Demulitplex panel.

Demultiplex Panel	
View Name	A default name is assigned to each camera view. This name can be changed if the view is saved as a Session Movie.
Number of Frames in View	The number of video frames contained in the view.
Movie Player Area	A movie player in which individual views can reviewed and edited if needed. The movie player review area contains a play button, a frame forward button, a frame backward button, mark-in and mark-out buttons and a video scrubber.
Algorithm Sensitivity Slider	Adjusts the percentage of the pixels in a frame that must match another in order to consider them from the same camera. A smaller percentage setting generally results in the creation of fewer views. A larger percentage will likely result in the creation of more views.

Demultiplex Panel	
Reassign Frames Into Views	Takes all the frames from selected views and redistributes them into the unselected views.

To view the frames in a Demultiplex View

1. Select a view in the Demultiplex panel
2. Use the buttons and scrubber in the movie player to play or scroll through the view.

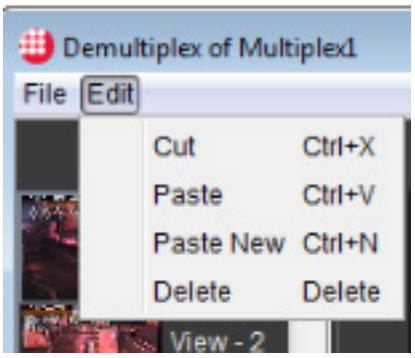
REASSIGNING FRAMES AND VIEWS

Since the demultiplex feature works by a frame-matching algorithm, there may be occasional frames which are omitted from a view because of irregularities or may be assigned to the wrong view. Individual frames can be reassigned by using cut and paste methods, or drag and drop reassignment.

You can reassign individual frames, group of frames or combine entire views in together. You can also take an existing view and split it into more views by adjusting the sensitivity slider to a higher percentage value and processing it once more.

To reassign single frames by Cut/Paste

1. Display the frame in the Movie Player area.
2. Select Edit > Cut.
3. Select the View you want to move it to.
4. Select Edit > Paste.



Frames in views can be edited by accessing the cut and paste options under the Edit menu.

Note: *All frames pasted within the views will be ordered in their proper chronological sequence.*

To move single frames by Drag/Drop

Individual frames can also be reassigned by using drag and drop from the Movie Player.

1. Display the frame in the Movie Player area.
2. Drag the selected frame from the Movie Player area to the desired View Icon on the left.

Note: *All frames dropped within the views will be ordered in their proper chronological sequence.*

To move a region of frames

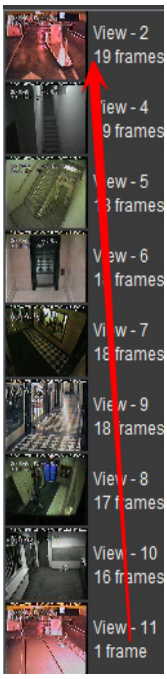
A group of frames can be moved from one view to another by using the movie player.

1. Display the first frame of the region in the movie player.
2. Hit the Mark In Button
3. Display the last frame of the region in the movie player.
4. Hit the Mark Out Button
5. Select Edit > Cut
6. Select the View you want to move the region to
7. Select Edit > Paste

You can also combine entire views, comprised of many frames, together.

To combine entire views by Drag/Drop

1. Select a view in the Demultiplex panel.
2. Drag the view and drop it onto the view that you want to merge it with.



Consolidate views that match by dragging and dropping one on the other.

To combine entire views by Cut/Copy

1. Select the view you want to move.
2. Select Edit > Cut
3. Select the View you want to move it to.
4. Select Edit > Paste

To create New Views

Sometimes, you may want to isolate a series of frames into their own view. To do so you can cut them from an existing view and then use Edit > Paste New.

1. Select the View or Frames you want to move.
2. Select Edit > Cut
3. Select Edit > Paste New

REVIEW ALL FRAMES IN A VIEW

Once you have reassigned frames, you should review all the frames in the view to make sure that you have everything you need. The best way to ensure that you are seeing every frame is to play the view in the movie player. If you quickly scrub through the movie with the movie scrubber, you may miss misassigned frames, especially for long views.

REASSIGN FRAMES INTO UNSELECTED VIEWS

There may be times when you want to take a view or group of views and reassign them into the remaining views. This will typically happen after you have run a first demultiplex on a session. Sometimes there will be a set of views of a small number of frames at the end of the list. These were defined to be their own distinct cameras. You can force them into one of the existing views by using the reassign option.

1. Select the view(s) you want to reassign.
2. Click the check box "Reassigning frames into Unselected Views".
3. Hit the Process Selection button.

The views where these frames have been assigned will be highlighted in blue.

SAVING VIEWS

Once you have a view from which you would like to create stills, save it to the main window.

To save a view

1. Select a View in the Demultiplex panel.
2. Select File > Save.

To save All Views

You can also save all the views from the Demultiplex panel at once.

1. Select File > Save All

STRATEGIES FOR DEMULTIPLEXING

Depending on the length and quality of the video data, demultiplex results may vary. For example, since the found views are based on pixel-matching, not from decoding the original multiplex signal, more views may be found than correspond to the actual number of cameras on the tape.

After the initial processing completes, browse through the views in the list to assess how well the process worked. The views will be arranged according to the largest quantity of frames per view, in descending order.

Check for any mismatched frames in the views. Use the movie player scrubber to browse through each one, playing them if necessary. Views at the bottom of the list may contain very few frames, or possibly only one frame. When this occurs, it's possible that the views are comprised of frames with a high degree of video noise, or similar anomalies, that prevented a match with other frames in the video.

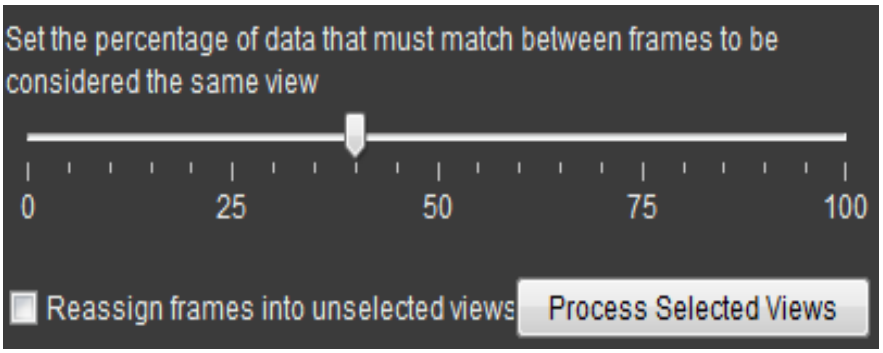
Additionally, it is generally easier to demultiplex shorter videos, rather than longer ones, comprised of several minutes.

CHANGING THE SENSITIVITY OF THE MATCHING ALGORITHM

The sensitivity slider sets the percentage of data that must match between frames in order to assign them to the same view. In most cases, demultiplexing will perform well using the default slider position (the default is set to group frames according to 40% of matching pixel data). It is recommended to use the default slider setting when processing for the first time.

A smaller percentage number means that a smaller area of the frame must match in order for the two frames to be considered the same view. A higher percentage means that a larger area of the frame must match to be considered the same view.

Moving the slider to a lower percentage number (left) usually results in fewer views. This means if frames are similar, but don't necessarily match, they may be grouped into the same view. Moving the slider to a higher percentage number (right) may result in more views, as it forces the algorithm to be more discriminating. Increased sensitivity to anomalies such as static, camera noise or panning are likely to cause more views to be found.



Adjust the sensitivity slider to set the percentage of data that must match between frames

Varying results of the demultiplex process may appear as follows:

"TOO MANY" VIEWS ARE CREATED

The demultiplexer may create dozens of views, even though the number of actual cameras could have been limited to 5 or 10. Because the number of found views is a result of the percentage of matching pixel data in individual frames, more views are created when the demultiplexer recognizes discernable differences in that data. There are different ways to correct this:

Manual consolidation of views
This is generally the easiest way of re-grouping views that are recognizably from the same camera. Drag and drop the views that match on top of one another until all the matching views are consolidated.

Reassign frames into existing views
The Reassign checkbox performs this process automatically, distributing frames to other existing views. The views that have been changed by this process will appear in the list highlighted in blue text. However, it may take longer for the computations to perform this task than a manual drag and drop would. It's generally more effective to use this feature with larger groups of views too difficult to consolidate manually. Once running this process, you will need to check the resulting views for consistency.

Lowering the slider setting
The demultiplexing process can be run again on the original session with a lower slider setting. This will produce fewer views, however, another effect of lowering the frame-matching sensitivity could be the presence of mismatched frames within individual views, thus prompting the need for more demultiplexing.

MISMATCHED FRAMES GROUPED TOGETHER IN VIEWS

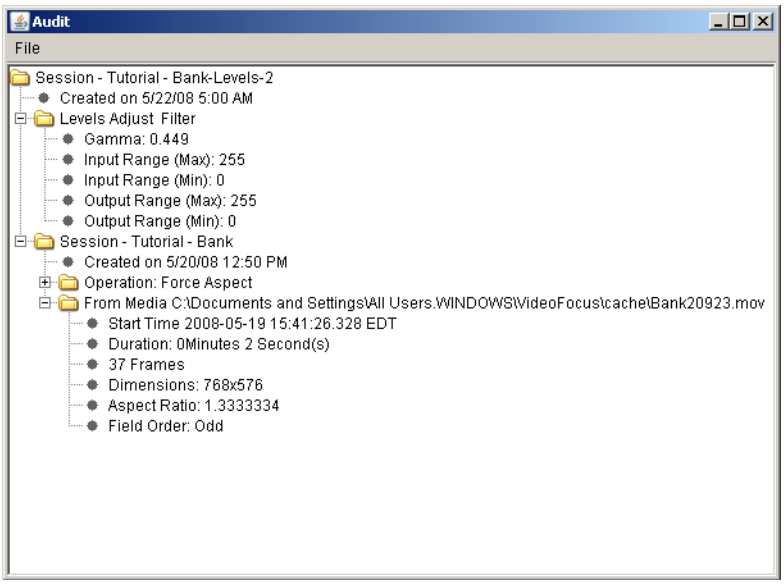
It’s possible some mismatched frames will be grouped together in views. This can be corrected by demultiplexing the newly created views themselves. Highlight the views to be demultiplexed. Move the slider further to the right, thereby increasing the sensitivity of the frame-matching algorithm, and process again. The new views will appear in the list highlighted in blue text. These views can then be combined with any other matching views in the list.

It may be simpler in some cases, when relatively few frames are misplaced, to manually drag the frames from the movie player to the appropriate views in the list. Additionally, after examining the video closely, you may want to delete any views or frames that contain irrelevant data, thus simplifying the regrouping process.

AUDITING SESSIONS

As videos become modified, filtered or edited, VideoFOCUS keeps track of all operations made along the way, and they can be easily retrieved and viewed in a expandable Audit tree. The Audit tree provides the names and parameters of all steps leading up to the session present state. By following the noted operations, the user has the information needed to recreate or demonstrate the changes, if required.

1. ***To view an Audit tree of a session***Select any session.
2. Choose View > View Audit.



This Audit tree indicates a Levels Adjust filter was applied to this movie, and provides the settings to recreate it.

CHAPTER 5

EXPORTING MEDIA

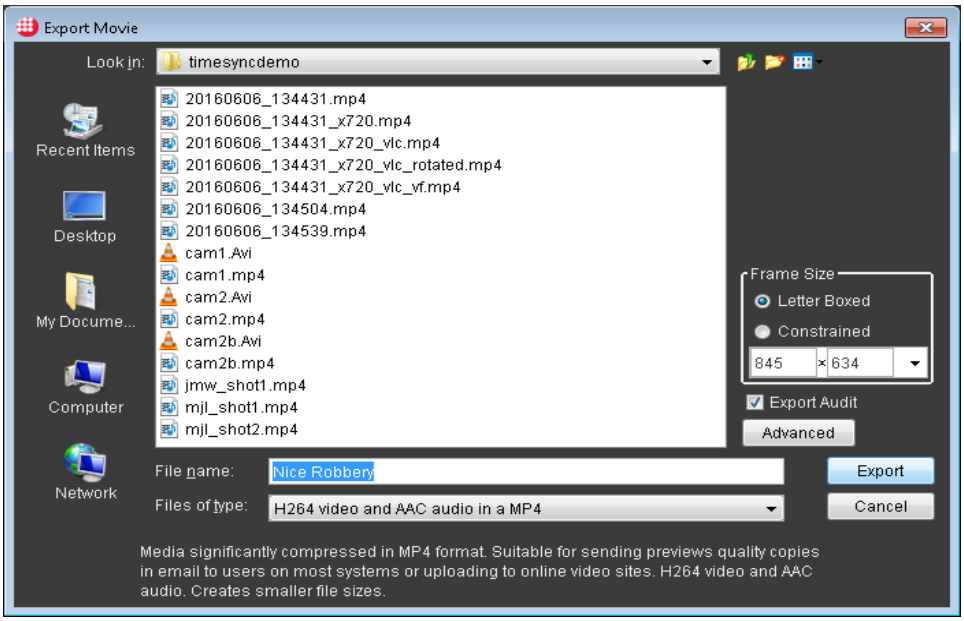
You can export videos and audio from VFCapture.

EXPORTING SESSION MOVIES & AUDIO

You can export the movies you have acquired in VFCapturein over many different compressed or uncompressed video formats. This feature is ideal for converting a library of video files into different formats (QuickTime to AVI, MPEG-4, etc.) for whatever reason, be it for archival or distribution purposes.

To Export a Session Movie

1. Select a session in the session list
2. Choose File > Export Movie. The Export Movie dialog appears.



3. Choose a profile. We have formats that support a variety of compressors, or codecs.
4. Alter the Frame Size, if necessary. The actual size is always the default when the dialog opens.
5. Choose to Export Audit or not. If Export Audit is chosen, a text file containing the audit of the exported item will appear alongside the exported media.
6. Choose your file location of your choice.
7. Choose Export to save and your new video will be created.

If the exported video is for archive purposes it is suggested that the user uses an uncompressed format. If you would like to email the video choose a compressed format.

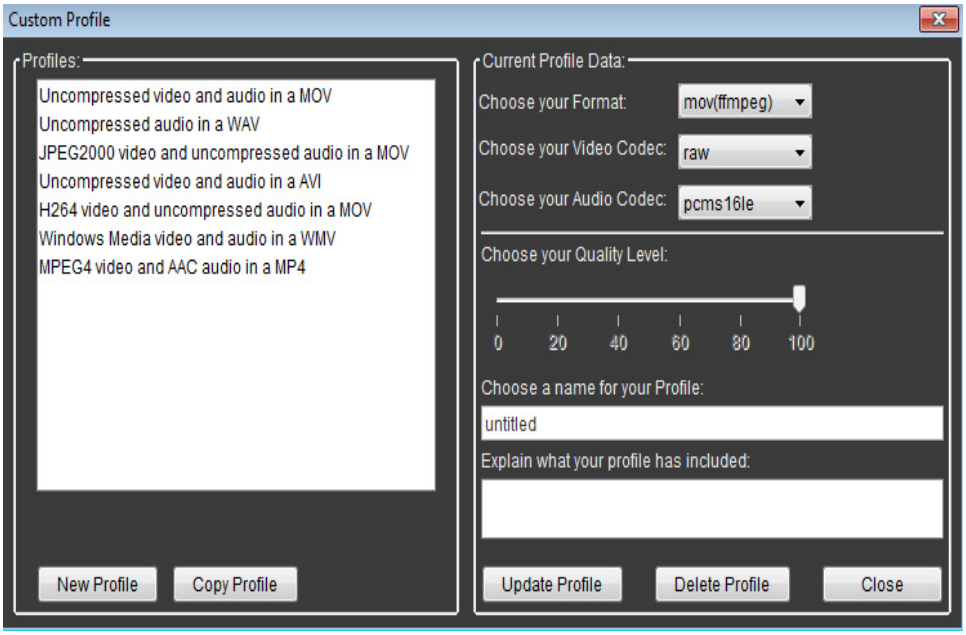
EXPORT SESSION MOVIE DIALOG BOX OPTIONS

The following table describes the options in the Export Preview dialog box.

Export Session Movie dialog box options	
Advanced	Allows the user to create, update or delete a custom profile.
Export Audit	If checked, will create a text file that contains the audit of the exported item.
Frame Size	Allows the user to change the frame size of the exported item
Export	Executes an export.
Cancel	Cancels an export.
File Name	Edits the name of the file to be exported. *This field is not editable in a batch export with multiple files.*

CUSTOM PROFILE DIALOG

You can create, delete, view and update your own custom profiles, where you can choose your own format, video codec, and audio codec. Just click on the Advance button to bring up the Custom Profile Dialog.



COMPRESSION FORMATS (CODECS)

The compressor (codec) you choose depends on the intended purpose of the media file. For example, to save files for archival purposes, in the best possible quality, it's best not to compress the files at all, by choosing a profile that has a raw video codec option. Raw compressor creates files without introducing additional compression artifacts to the video (any compression artifacts present in the original file remain, however). The compression profile formats listed in the export dialog are standardized among video applications. Some are widely used, while others are less so.

Recommended Compression Formats - Quicktime

These files, appended with the .MOV extension, will open in QuickTime player.

1. **Uncompressed (Raw)**: No compression, best image quality, produces a large file. The large file size often prohibits it from being a reasonable format if the file is intended for electronic transfer, via email or the web.
2. **JPEG 2000**: JPEG compression, high quality, smaller file size. The loss of quality is minimal.
3. **MPEG-4**: MPEG compression, moderate quality, small file size. The loss of quality is pronounced, but the small file size makes the format ideal for electronic transfer, via email or the web.
4. **H264: H264** compression, high quality, small file size. The loss of quality is minimal, and the small file size makes the format ideal for electronic transfer, via email or the web.

Recommended Compression Formats - AVI

These files, appended with the .AVI extension, will open in Windows Media Player or QuickTime player.

1. **Uncompressed (Raw):** No compression, best image quality, produces a large file. The large file size often prohibits it from being a reasonable format if the file is intended for electronic transfer, via email or the web.
2. **JPG2K Compressor:** JPEG compression, high quality, smaller file size. The loss of quality is minimal if the quality slider is set to "best".

EXPORTING AUDIO

If you have files that contain an audio track, you can export them along with the video as a Quicktime (.mov) file, AVI or most other formats listed.

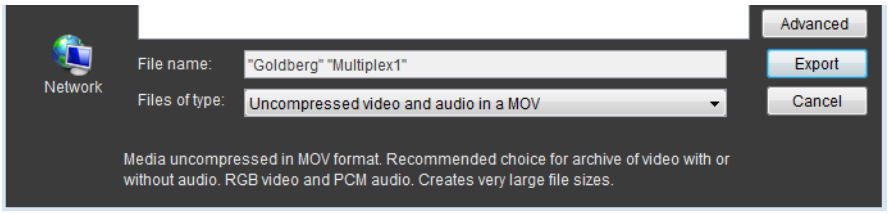
If you wish to export the audio only, then you can select a profile with a wave WAV format. This will create a WAV file that contains the audio from the movie.

BATCH EXPORT OF MOVIES

You can export any number of movies, or in a succession of concurrent exports.

To Batch Export Session Movies

1. Select the sessions in the session list. Ctrl-click for non-contiguously ordered session movies, Shift-click for contiguously ordered session movies.
2. Choose *File* > *Export Movies*. The Export Movie dialog appears.
3. Choose a file selection format (AVI or QuickTime). Both QuickTime and AVI support a variety of compressors, or codecs.



When batch exporting, the File Name field is not editable.

4. The file names for the selected movies in a batch export will be preserved in the export process and cannot be edited in the export panel. If you wish to change the name of a file for batch export, do so before exporting it.
5. As the session movies, a progress bar appears. If multiple session movies are exported in a batch, each session movie will be concurrently exported.

APPENDIX A

TROUBLESHOOTING

This appendix contains information about contacting Salient Sciences Technical Support.

CONTACTING TECHNICAL SUPPORT

For phone support, call (+1) 919.572.6767 (option 2) from 9:00 AM to 5:00 PM, EST.

For online support, email support@salientsciences.com

As a Salient Sciences customer, you have access to our online support to ask questions, look up answers to frequently asked questions and download documentation - www.salientsciences.com/support

APPENDIX B

VFCAPTURE REGISTRATION

LICENSE INFORMATION

VFCapture can license your software in two different ways:

HARDWARE DONGLE REGISTRATION

VFCapture can be issued with a dongle. If you have a dongle:

1. Install the HASP drivers. If you need a HASP driver, please go to our faq webpage for instructions on how to download the latest driver from the manufacturer. www.salientsciences.com/videofocus/support/faq.html
2. Insert the dongle in any empty USB port. Ensure that the red light on the dongle is solid before proceeding with use of VFCapture.
3. Launch VFCapture. The license on the encoded dongle should be accepted.
4. If you are unable to register and are giving a warning that states "No Hardware Key Detected," please double check that the drivers are installed correctly and that the dongle is recognized by your computer.

SOFT REGISTRATION & CONNECTED TO THE INTERNET

If you were not issued a dongle with your copy of the software, the first time the application is launched, VFCapture will see that "No Hardware Key" is detected and it will attempt to license your product over the Internet.

1. Launch VFCapture.
2. A dialog will be displayed requesting an installation ID. This Installation ID will have been provided to you by Salient Sciences.
3. After entering the Installation ID, follow the prompts to fully register your product. Be sure to include end user information including: Company Name, Contact Name, E-mail, and Phone Number
4. VFCapture will now launch.

SOFT REGISTRATION & NOT CONNECTED TO THE INTERNET

If you were given an Installation ID but your machine is not connected to the Internet you can still activate your product.

1. Launch VFCapture.
2. A dialog will be displayed requesting an installation ID. This Installation ID will have been provided to you by Salient Sciences.
3. Follow the instructions as prompted by the VFCapture registration installer.

If you experience any issues registering VFCapture, please email **support@salientsciences.com** or call support at (+1) 919.572.6767 (option2).

UPDATE YOUR LICENSE

If you are not connected to the Internet, you can update your license when you receive a new activation code from Salient Sciences.

1. Choose Help > Update License.
2. Enter in your activation code. If you do not have one, contact **support@salientsciences.com**.