



comTM sur

the missing piece of CCTV

COM-SURTM EMPOWERS PEOPLE TO ACHIEVE
OPTIMAL OUTCOMES FROM SURVEILLANCE VIDEO,
LEADING TO A SAFER WORLD.



**CCTV VIDEO
FOOTAGE AUDITING
AND INVESTIGATION
COURSE -**

**ADVANCED
MODULE**

CCTV VIDEO FOOTAGE AUDITING AND INVESTIGATION COURSE - ADVANCED MODULE

The Advanced module of the CCTV video footage auditing and investigation course is useful for both commercial and non-commercial users including business owners, CCTV operators/system integrators, or to anyone looking to acquiring new skills to gain jobs of 'CCTV video footage auditors', and business opportunities of CCTV video footage auditing services; for example, a facility management services organization, or a security company can get its staff to take this module and have them eventually certified as 'CCTV video footage auditors'. It is reckoned that this group needs more advanced features, including investigative features and detailed reporting which can deliver business intelligence from the same.

The Advanced module revolves around the COM-SUR 'ULTIMA' version (highest version), which besides covering the topics of the Foundation module, concentrates on several more advanced features like false colors (forensics), that make video content analysis (VCA) extremely easy, efficient, and standardized. The Advanced module is very useful to investigate incidents that need minute analysis of video, photos, and images. While some specific examples are given below, most can overlap, and are relevant for any vertical.

The Advanced module also concentrates on how COM-SUR makes joining of the dots easier when video is received from multiple sources like CCTV cameras, mobile phones, drones, body-worn cameras etc.

The Advanced module is extremely useful for the police, law enforcement agencies, defence forces, investigators, fraud and loss prevention teams, etc.

Think of Auditing as the Fourth Eye. It's time to open it!

Some examples that demonstrate the need for taking the Advanced module:

Airports may want to minutely investigate suspicious movements, left baggage, suspicious items discovered through an X-ray machine.
Banks may want to minutely investigate an incident of theft/fraud.
Commercial establishments may want to minutely investigate health and safety issues.
Educational institutions may want to minutely investigate movements of students and school staff.
Factories may want to minutely investigate production lines and processes.
E-Commerce companies may want to minutely investigate product handling and shipping.
Hotels may want to minutely investigate guest complaints.
Hospitals may want to minutely investigate patient care and staff safety.
Insurance companies may want to minutely investigate roof conditions or damaged pipes and rigs.
Restaurants may want to minutely investigate kitchen hygiene.
Retailers may want to minutely investigate staff and customer interaction.

Also, issues like wastage of resources, shrinkage, compliance and operational efficiency, risk mitigation, root cause analysis (RCA), threat and hazard identification (THIRA), total quality management (RCA), good manufacturing practices (GMP) etc., all become easier using COM-SUR ULTIMA.

The module covers interesting use cases, including how COM-SUR makes it easy for AI and ML models to work with more relevant images for the purpose of training models, thereby reducing bias.

ONLINE VIDEO LECTURES - LEARN ALL OF THE ABOVE IN UNDER 200 MINUTES!

That is all it will take to learn how to achieve optimal outcomes from your existing CCTV cameras, through the dedicated and disciplined use of COM-SUR. Our exceptionally well explained lectures will make this possible.

Go on then. Take this module. Do read the [COURSE OVERVIEW](#) document and browse through all the other sections of our website www.comsur.biz, to gain a completely new perspective of why this visually rich source of information cannot remain as 'fit and forget' anymore.

COM-SUR ULTIMA VERSION VIDEO LECTURES

COM-SUR ULTIMA version video lectures are available through our course dissemination partners. Here is the link to select a partner of your choice:

[Course Dissemination Partners](#)

Whether you are self-learning, or are going to be assisted by a trainer, you will find these lectures to be very useful and interesting to get the best out of COM-SUR ULTIMA.

The lectures are divided into several segments and have a very meaningful sequence as can be seen further on in this document. It is suggested that you follow the sequence and work with COM-SUR ULTIMA at the same pace as the lectures.

Notes:

1) Please make sure to read the topics on the Recommended System Requirements, Installation, Computer Settings and Tips. These are part of the detailed COM-SUR ULTIMA version user manual which can be downloaded from here:

https://www.comsur.biz/COM-SUR_Ultima_User_Manual.pdf

2) In some parts of the document you will observe the word 'screenshot'. In other parts, you will observe 'screenshots and/or images'. Essentially, 'screenshots' are referred to those 'images' that have been created through the means of a 'screenshot', while an 'image' is referred to those items that are 'images' which you could be working with, which are not 'screenshots'. For example, you may want to use COM-SUR's exceptional utility of creating a quick PowerPoint deck using photos shot with your mobile phone/camera. Such items are referred to as 'images'.

Segment Details	Topic
<p>01. Introduction.</p> <p>Recorded video 1.42 minutes</p>	<p>Hear our founder and CEO Gautam D. Goradia introduce the 'CCTV VIDEO FOOTAGE AUDITING AND INVESTIGATION COURSE' which is available in three modules namely:</p> <ol style="list-style-type: none"> 1. The Fundamental module (based on the free COM-SUR HOME version that you can download from www.comsur.biz). 2. The Foundation module (based on the COM-SUR BUSINESS version). 3. The Advanced module (based on the highest version of COM-SUR - the ULTIMA version and which concentrates a lot on the investigating abilities of the same). <p>Hear him suggest to study www.comsur.biz and all the relevant material therein.</p> <p>Lastly, hear him emphasize that 'CCTV footage is not garbage', 'Use it, not lose it' and let COM-SUR help you in turning this garbage into gold!</p>

Segment Details	Topic
<p>02. Manual capturing of visual information.</p> <p>Recorded video 29.22 minutes</p>	<p>Overview:</p> <p>A huge problem that users face when analysing videos, (besides codec issues), is having to: (a) Pause at an important moment/scene (b) Analyse the same (c) Click Print Screen (d) Paste the result into a software like MS Paint (e) Play the video and do this all over again. This is a very cumbersome, and time-consuming process.</p> <p>With COM-SUR, you simply click the F6/F7 keys as often as needed while the video is playing; thereby taking away the need to Pause. Doing so, not only converts that important moment/scene into an image, but it also simultaneously aggregates the same in COM-SUR's Collection dialog box. This results in enormous reduction of burden, and allows you to concentrate on the video, rather than wasting time, and losing the attention span. Further, from the Collection dialog box you can take various quick next steps such as creating reports, tagging important images for future search, etc.</p> <p>Demonstration of the following features:</p> <ul style="list-style-type: none"> • F6/F7: Explaining when to use the F6 key, and when to use the F7 key; both for capturing a person/scene of interest from recorded/live videos; for example, from a scene of crime/incident. Pointing out to the 'green light' in COM-SUR's task bar icon, indicating the confirmation of the activity. • F8: Explaining when and how to use the F8 key for capturing multiple items of interest from a single source. For example, a scene of crime/incident may depict several items of interest in a single scene. • F9: Explaining when and how to use the F9 key for snipping multiple items of interest from multiple sources. For example, an investigation could consist of videos, webpages, social media, etc., all of which may need to be collated. This feature is also very useful to create a digital library of news articles. • Explaining how to create a standardized Speedy report in Microsoft PowerPoint with the images aggregated due to the above capturing activities, in the Collection dialog box.

- Explaining how to create a Collage from images in the Collection dialog box for sharing multiple related persons/items of interest together as a single composite image.
- Explaining how to add a Description to the images in the Collection dialog box, which is especially useful when creating various reports in Microsoft PowerPoint/Word/PDF.
- Explaining how to Tag the images in the 'Collection' dialog box, which is especially useful to create an institutional library for future use, and ease of search.
- Explaining how to add links to images in the Collection dialog box. For example, adding videos, documents, URLs, etc. as a Link. This is especially useful to create a 'case folder' for a specific case.
- Explaining how to review the images in the Collection dialog box, which is especially useful for re-examination.
- Explaining the send option to send the images in the Collection dialog box to a Location, via Email, via Skype, or as a COM-SUR data file.
- Explaining how to Remove images from the Collection dialog box.

Segment Details	Topic
<p>03. Converting live/recorded video into images ('Capturing').</p> <p>Recorded video 18.45 minutes</p>	<p>Overview:</p> <p>Learn how COM-SUR smartly converts live/recorded video into images.</p> <p>Doing so, helps you to:</p> <p>(1) Reduce the 'amount' of video to be investigated.</p> <p>(2) Hugely reduce the size of the data.</p> <p>(3) Create a very cost-effective disaster recovery backup.</p> <p>Demonstration of the following features:</p> <ul style="list-style-type: none"> Explaining the 'Window' screenshots capture feature, i.e., converting video feeds, whether live or recorded, from any source (CCTV/drones/UAVs/body-worn/mobiles) into screenshots (images) in the background, using the Quick and Advanced capture features. Explaining the challenges of a browser, and why a video management system (VMS) is recommended for live video viewing. Explaining the limitations of certain VMS with respect to the total number of instances that can render multiple live video streams simultaneously; for example, discussing how the Milestone VMS allows the opening of multiple instances simultaneously along with rendering live video in each instance, without the need for multiple monitors. Explaining (once fired-up), the 'main screen' or the main elegant user interface of COM-SUR, and commanding COM-SUR to start the 'capturing' activity for each 'Window'. Minimizing COM-SUR, clicking the relevant video feed, and pressing the combination of CTRL+F10 to start the activity, which brings up the options between a Quick/Advanced capture. Selecting the Advanced option brings up the 'Window' screenshots capture dialog box. Explaining the detailed instructions and the options available in the 'Window' screenshots capture dialog box, i.e., setting a time interval

between two screenshots, and the importance of the 'moment' of the 'one second' and how this 'moment', which is a 'finished product' of 'spare parts' hugely reduces the data size, and 'volume' of the data that needs to be seen.

- Explaining the 'Max' Possible capturing feature, and how the feature of capturing for a specified duration is very useful during the investigation of an incident.
- Explaining how to describe a 'Window', and the preview in the lower half of the dialog box. Then explaining how to use the Crop button to select the desired area of the feed to be captured, and how clicking the Apply button shows the preview of the selected area.
- Explaining how, after completing the above activities, the color of the COM-SUR icon in the taskbar changes to Blue, while the color of the 'Window' screenshots capture list button on COM-SUR's main screen changes to Green.
- Explaining how the capturing activity creates a very cost-effective disaster recovery mechanism, and why auditing should be carried out by those who have the best situational awareness, and consequently, why it is important to carry out the auditing activity on site.
- Explaining the Quick capture activity in detail.
- Explaining how to carry on the capturing activity with other 'Windows', and how COM-SUR smartly continues to convert video into images even of those 'Windows' that are rendering video feeds in the background.
- Explaining how to work with multiple monitors in case of a command center where the video feed may be streamed on multiple monitors.
- Explaining each of the elements of the 'Window' Screenshots Capture List dialog box.

Segment Details	Topic
<p>04A. COM-SUR's 'Smart Media Player' (The Results dialog box). How it makes the process of Auditing (investigating) easy, efficient, and standardized. - Part A</p> <p>Recorded video 44.45 minutes</p>	<p>Overview:</p> <p>Most video management systems (VMS) just 'manage' cameras. While some of them offer video analytics, search features, and so on, none offer the ease, flexibility, and multiple playback features, including one that can be controlled by the 'mouse'; and of course, the ability of being able to playback with great ease during a remote video auditing process. Also, video extraction is not an easy process from a DVR/NVR/VMS, especially during remote video auditing. And what about a case when the recording device itself is stolen, destroyed, or tampered with? Again, none offer some of the wonderful 'next step' features as offered by COM-SUR.</p> <p>Demonstration of the following features:</p> <ul style="list-style-type: none"> • Explaining how to bring the captured screenshots of any 'Window' into COM-SUR's Smart Media Player (the Results dialog box). Further explaining the various options available to bring forth only a selected set of screenshots. • Explaining the user interface of COM-SUR's Smart Media Player (the Results dialog box). A cursory description of the same is made, referring to the instructions on every dialog box in COM-SUR, as well how each button is described with a relevant tool tip. Explaining what the 'green' color on a button means while referring to the 'Magnify Details' button and explaining the same. • Explaining the various ways of auditing (investigating) hours of CCTV video footage in minutes; easily and efficiently. While the COM-SUR ULTIMA version offers six different playback mechanisms, the easiest one, i.e., the Glider Mechanism will be demonstrated first. • Explaining the Refresh Result Set feature, to bring forth a new set of screenshots being captured in the background. • Explaining how to invoke the Glider mechanism, and how to 'glide' through thousands of screenshots and/or images in minutes (representing hours and

hours of video footage) using the mouse, zooming/panning, and flagging an exception. Changing the size of the Glider window and demonstrating its utility value for comparison between a single frame with multiple frames. Navigating one by one in the Glider mechanism.

Further explaining the CTRL+V feature, which sends an exception to the Collection dialog box, or the main Action Centre, from where several next steps can be taken.

- Explaining the balance five playback mechanisms, i.e. (1) Slider (2) Fine-Tune Slider (3) Play, Rewind, Last, First, Next (plus hold), Previous (plus hold) (4) Skip (5) Auto-Review. Also explaining how the PgUp/PgDn keys skip 5 screenshots, and also that while reference is made to the images as screenshots, all the features of COM-SUR's Smart Media Player are available with any image. So, in effect, it is screenshots and/or images.
- Explaining how to Zoom/Pan screenshots and/or images effortlessly during the auditing activity using the mouse wheel/left mouse button. Explaining how to Reset a screenshot and/or image to its original resolution.
- Explaining how to enhance the Exposure (Brightness and Contrast) of screenshots and/or images.
- Explaining how to apply various Filters (Grayscale, Invert, Color Tints, and Heatmap) to screenshots and/or images to improve the chances of isolating/discovering persons/items of interest, and for forensic investigation.
- Explaining how the Magnifier option i.e., picture-in-picture (PIP) is very useful to concentrate on a specific area during the Auditing. Further, explaining how the comparison can be done using various Filters.
- Explaining how to quickly Flag a screenshot and/or image having a person/item of interest so that you can come back to it later.
- Explaining how to categorize persons/items of interest using different Color Flags, and how to work with them.

- Explaining how to Highlight specific areas of a screenshot and/or image to work with desired areas and filtering out the irrelevant ones.
- Explaining the menu options available on right-clicking the Highlight box.
- Explaining how to add a Caption (F2) to one or more Highlighted areas to create and share images of people, items of interest, exceptions, etc. along with its description as a caption. This feature also acts as a tool to aggregate relevant images for artificial intelligence models.
- Explaining how to review Highlighted area(s) only using the Customized Review feature.
- Explaining the Collage feature, where a single Highlight box is used to select people/items of interest to create a 'storyboard' and taking next steps with the same.
- Explaining how to add Clip-arts and text to screenshots and/or images. Further, explaining how to customize the same with respect to color, width, mask, transparency, font, etc.

Segment Details	Topic
<p>04B. COM-SUR's 'Smart Media Player' (The Results dialog box). How it makes the process of Auditing (investigating) easy, efficient, and standardized. - Part B</p> <p>Recorded video 49.39 minutes</p>	<p>Overview:</p> <p>Continuing with the topic on COM-SUR's 'Smart Media Player' (The Results dialog box).</p> <p>Demonstration of the following features:</p> <ul style="list-style-type: none"> • Explaining how to Send the current screenshot/image to the Collection dialog box. • Explaining how to access the More Send Images to Collection Options. • Explaining what is a 'Visible Area' of a screenshot and/or image, and the different scenarios of accessing the 'Visible Area' i.e. when a screenshot/image is zoomed or panned, and/or when an area of a screenshot/image is highlighted, and/or when the exposure of a screenshot/image is enhanced, and/or when a Filter has been applied to a screenshot/image, and/or when a Clip-art and/or text has been added to a screenshot/image. • Explaining how to send the 'Visible Area' of the screenshot and/or image to the Collection dialog box. • Explaining how the More Send Visible Area to Collection Options. • Explaining how to Edit a screenshot and/or image from within the Collection dialog box, and the Refresh button that displays the Edited result. Also, explaining how to Locate a screenshot and/or image that is in the Collection dialog box in the Results dialog box. • Explaining the various elements and features of the Collection dialog box. • Explaining how to create standardized reports in Microsoft PowerPoint with the screenshots and/or images in the Collection dialog box, i.e., Speedy Report, Audit Report, Incident Report, and All is Well Report.

- Explaining how to create videos from the screenshots and/or images in the Collection dialog box, explaining the F/F Rate, the Preview feature, as well as the choices to embed the video (with or without images) in the Speedy Report or Audit Report or Incident Report or All is Well Report.
- Explaining how to add a Description to the screenshots and/or images from the Collection dialog box, which is especially useful when creating reports in Microsoft PowerPoint/Word/PDF.
- Explaining how to add Tags to the screenshots and/or images from the Collection dialog box, which is especially useful to create an institutional library for future use, and ease of search. Further, explaining how you can add additional attributes like Location and Peculiarity to the respective Tag, how you can use previously added Tags, as well as how you can choose to use the Tags in the Tags MIS (MIS reports in MS Excel from Tags).
- Explaining how to add Links to screenshots and/or images from the Collection dialog box. For example, adding videos, documents, URLs, etc. as a Link. This is especially useful to create a 'case folder' for a specific case.
- Explaining how to create videos from multiple 'Windows'.
- Explaining how to create a Collage from screenshots and/or images from the Collection dialog box for sharing multiple related persons/items of interest together as a single composite image.
- Explaining how to Review a limited set of screenshots and/or images; for example, those that may have been flagged.
- Explaining the 'Send' option to send the desired screenshots and/or images to a Location, via Email, via Skype, via WhatsApp, or as a COM-SUR data file.
- Explaining the Remove from Collection option.
- Explaining what Contact Sheets are, and how to create them in Microsoft Word, Microsoft PowerPoint, and PDF.

- Explaining the Quick Video mode and Selective Quick Video mode.
- Explaining how to invoke the Full screen mode and exiting the same. Explaining that the different elements of COM-SUR's Smart Media Player (The Results dialog box) can be accessed in the Full screen mode by the relevant shortcut key combinations.
- Explaining the menu options available on right-clicking the screenshot/image in the Results dialog box.
- Explaining the More Options dialog box with reference to how to navigate to the previous or next Result Set in the Results dialog box.
- Explaining the More Options dialog box with reference to the Refresh button.
- Explaining the More Options dialog box with reference to the Search/Open and Act/List of 'Windows' being captured options.
- Explaining the More Options dialog box with reference to the Delete and De-link options from the Results dialog box. Explaining why De-Linking is useful for COM-SUR's database maintenance.
- Explaining the More Options dialog box with reference to the Tags, Description, and Links button.
- Explaining the More Options dialog box with reference to the Exposure and Filters dialog box.
- Explaining how to navigate to a specific screenshot and/or image by entering the respective screenshot and/or image number.

Segment Details	Topic
<p>05. RIP-IT - A batch frame extractor tool from videos.</p> <p>Recorded video 34.58 minutes</p>	<p>Overview:</p> <p>COM-SUR works with screenshots captured from live or recorded video feeds. But what if you want to work with external videos from various sources like drones, body worn cameras, covert cameras, dashcams, mobile phones or even from an external DVR or NVR?</p> <p>In such cases, RIP-IT a batch video frame extractor, developed by us, helps in extracting images from such videos, which you can then import into COM-SUR.</p> <p>For example; in any incident such as a bomb blast, stampede, terror attack or even chain snatching, the law enforcement agencies gather videos from multiple sources like – city surveillance cameras, private CCTV cameras, and public videos recorded on mobile phones and so on. The police/investigation officers then have to painfully go through hundreds/thousands of hours of video and put relevant findings together. For this, they need to review the videos over and over again and make keen observations, analyze body language, discover recces, etc. COM-SUR helps them do this efficiently and in a standardized manner.</p> <p>Demonstration of the following features:</p> <ul style="list-style-type: none"> Explaining the 'RIP-IT' software, which is a batch video frame extractor tool that will extract frames from external videos from various external sources such as, drones, body worn cameras, covert cameras, dashcams, mobile phones or even from an external DVR or NVR which can then be imported into COM-SUR. Explaining how to extract frames for selected time slots as well as change the layout in which the frames will be extracted. Explaining the various extraction settings in RIP-IT with respect to every X seconds/every X frames.

- Explaining how to bring in the extracted frames into COM-SUR using the Open and Act utility. Further, explaining the various elements of the Folder List dialog box.
- Explaining in brief the various options to view the extracted frames, available from the Action dropdown menu of the Folder List dialog box – ‘View One By One’, ‘View in Selection Grid’, ‘View in Zoom Mode’, and ‘Open Output Folder’.
- Explaining how the ‘View One by One’ option which brings forth the extracted frames of all the videos one by one sequentially in COM-SUR’s Smart Media Player (the Results dialog box) and how you can work with the same.
- Explaining how the ‘View in Selection Grid’ option which brings forth the extracted frames of all the videos as tiles in a dashboard (side by side) view. Further, explaining, how you can play multiple videos together in the Selection Grid . Further, explaining the various elements of the Selection Grid and how it allows for easier ‘joining of the dots’.
- Explaining how to work with videos in the Selection Grid. Further explaining how to frame synchronize and compare different videos in the Selection Grid, which is especially useful during investigation to compare what is happening across multiple video tiles.
- Explaining how to lock a desired frame in a video in the Selection Grid so that the user can continue with the investigation and come back to the locked image at any time.
- Explaining how to send desired frames (either as is or as a collage) that depict important scenes/items of interest to the Collection dialog box in order to take the logical next steps like for example quickly creating a report in PowerPoint.
- Explaining the options that are available on right-clicking of a tile in the Selection Grid.

- Explaining the 'View in Zoom Mode' option which allows you to work with frames from a desired video in the Selection Grid, including a unique bookmarking feature.

Segment Details	Topic
<p>06. Creating and Searching for Reports and obtaining MIS (Business Intelligence) from Reports and Tags.</p> <p>Recorded video 9.53 minutes</p>	<p>Overview:</p> <p>Using historical data, Audit/Incident reports and Tags, COM-SUR delivers 'patterns' (business intelligence). This allows stakeholders to take more informed decisions, and corrective and preventive action.</p> <p>Demonstration of the following features:</p> <ul style="list-style-type: none"> • Explaining how to create Audit, Incident, and All is Well Reports. • Explaining how to search for previously created Audit and Incident Reports and taking next steps. • Explaining how to obtain MIS reports in Microsoft Excel, based on the previously created Audit and Incident Reports. Further, explaining the various Report Type and Group By options. • Explaining how to obtain MIS reports in Microsoft Excel based on the Tagged items. Further, explaining the various Report Type options available in Tags MIS.

Segment Details	Topic
<p>07. Miscellaneous topics.</p> <p>Recorded video 10.24 minutes</p>	<p>Demonstration of the following features:</p> <ul style="list-style-type: none"> • Auto-Pilot - Explaining how COM-SUR can help in monitoring the activity on your desktop; for example, you may want to monitor any unauthorized activity on your computer, when you are away from the same. • Bookmarking URLs - Explaining how to Bookmark frequently used URLs of video feeds for quick and easy access. • Open and Act - Explaining how files, including folders/zipped folders can be opened to bring in external images and/or screenshots into COM-SUR's 'Smart Media Player'. Further, explaining the 'Show Folder Hierarchy' option which enables you to select the desired sub-folders within a parent folder in order to bring in images from the same.

Segment Details	Topic
<p>08. Search and COM-SUR Settings.</p> <p>Recorded video 23.54 minutes</p>	<p>Overview:</p> <p>COM-SUR lets you search for screenshots and/or images which have been captured by the Program, as well as external images which have been tagged. You can easily find and retrieve relevant data that spans across days, weeks, months, or even years. also, since a screenshot can depict multiple cameras, in effect you can find data of several cameras. Compare this with present CCTV surveillance systems where it takes a huge amount of effort to find relevant video even from a single camera. Imagine the hassle when relevant videos from multiple cameras need to be found.</p> <p>Demonstration of the following features:</p> <ul style="list-style-type: none"> • Explaining how to Search for screenshots and/or images within a desired date and time range. • Explaining how to Search for screenshots and/or images using a unique search mechanism for a desired time 'slot' within selected dates. • Explaining how to Search for previously Tagged screenshots and/or images from the Tag Cloud. • Explaining the various elements of the Tags dialog box. • Explaining each of the tabs in the Settings and Tools of COM-SUR.

Segment Details	Topic
<p>09. From the Founder - the value proposition of COM-SUR.</p> <p>Recorded video 1.37 minutes</p>	<p>Check out the Founder's views about why COM-SUR needs to become a de-facto part of CCTV and video surveillance, and the overall value proposition that COM-SUR can help deliver to <u>YOU</u>!</p>