com sur ™

the missing piece of CCTV

THE FOOTAGE WHISPERER

"SEE WHAT THE CAMERA SAW"

100+ TOPICS - AIRPORTS TO ZOOS

UTILITY VALUE OF COM-SUR™ FOR LABORATORIES AND RESEARCH FACILITIES

WELCOME

AUDIT HOURS OF FOOTAGE IN MINUTES
FIND OUT HOW COM-SUR WILL HELP

CCTV surveillance is common in laboratories and research facilities world over, but footage is often only reviewed reactively. Our company realized this problem early-on and has developed the world's only CCTV video footage auditing software that encourages daily auditing (hours in minutes) of CCTV footage, filling the gap for a complete "workflow". The software works with existing cameras and VMS, regardless of type/brand, and provides a standardized approach for intelligent incident reporting. Our software also offers exceptional investigative capabilities.

'COM-SUR' – THE WORLD'S ONLY CCTV VIDEO FOOTAGE AUDITING, SMART BACKUP, AND STANDARDIZED INTELLIGENT INCIDENT REPORTING SOFTWARE – THE MISSING PIECE OF CCTV

COM-SUR is the world's only CCTV video footage auditing, smart backup, and standardized intelligent incident reporting software that serves as a complete workflow and force multiplier. It helps audit 24 hours of footage in minutes, reduces data size, creates standardized intelligent reports, and delivers business intelligence. COM-SUR helps unlock hidden information in CCTV footage and enables people to gain actionable intelligence, improve homeland security, prevent crime and losses, identify and mitigate threats and hazards, and improve operational efficiency. It empowers people to gain new jobs as CCTV video footage auditors and start new businesses of auditing video footage. Like MS Office, COM-SUR is an enabler that makes it easy to work with CCTV cameras in a standardized way, leading to better decision-making. It also offers exceptional investigative capabilities.

HOW COM-SUR SMARTLY REDUCES 'VIDEO' STORAGE SIZE

COM-SUR employs an innovative approach to smartly reduce the amount of video to be audited and consequently the storage size of videos. Regardless of the video's frame rate, COM-SUR captures a single screenshot of the consolidated 'moment' of 'that' one second, when the I, P, and B frames come together. This method significantly reduces data size without sacrificing vital information. It goes without saying that when multiple cameras are displayed in a grid view, say 4x4, the storage size is further reduced since all the cameras are captured as a single image. Since no suggestion is being made to replace the actual video with screenshots, COM-SUR acts as a wonderful supportive technology both to audit (review) just 86400 frames representing 24 hours and reducing the data size at the same time.

CHALLENGES FACED BY LABORATORIES AND RESEARCH FACILITIES

1. Unauthorized access:

Laboratories and research facilities often house sensitive equipment, materials, and data. Unauthorized access to these areas can lead to theft, sabotage, or compromise of research integrity. Intruders may attempt to gain access to valuable equipment, sensitive information, or hazardous materials.

2. Theft and vandalism:

Laboratories and research facilities may be targeted for theft of valuable equipment, materials, or intellectual property. Vandalism or sabotage can disrupt ongoing experiments, damage equipment, or compromise research outcomes.

3. Biological and chemical hazards:

Laboratories dealing with biological agents, hazardous chemicals, or radioactive materials face the risk of accidental releases or exposure. Contamination incidents can pose risks to personnel, the environment, and public health.

4. Laboratory safety incidents:

Accidents and safety incidents such as fires, chemical spills, or equipment malfunctions can occur within laboratories. These incidents can result in injuries, property damage, or disruptions to research activities.

5. Intellectual property protection:

Laboratories and research facilities often conduct innovative research and development, creating valuable intellectual property. Protecting intellectual property from theft or unauthorized disclosure is crucial to maintaining a competitive edge.

6. Data security:

Laboratories and research facilities generate and store vast amounts of data, including experimental results, research findings, and confidential information. Safeguarding this data from unauthorized access, cyber-attacks, or data breaches is essential.

7. Compliance issues:

Laboratories and research facilities must comply with various regulations and guidelines related to safety, security, and research ethics. Ensuring compliance with these requirements can be challenging and requires robust security measures and protocols.

8. Occupational safety and health:

Laboratories and research facilities need to maintain a safe and healthy work environment for their personnel. This includes managing hazardous substances, implementing safety protocols, providing appropriate personal protective equipment, and conducting regular safety training.

9. Insider threats:

Laboratories and research facilities have to deal with insider threats from disgruntled employees or even unwitting staff who fail to follow proper security and safety measures.

10. Humongous growth of surveillance video:

The exponential growth of surveillance cameras has resulted in an unprecedented surge in surveillance video. Effectively managing this data has become a daunting challenge due to the massive storage capacity required, especially considering the prolonged retention periods necessary for security, incident investigation, or legal purposes. Furthermore, the prevalence of high-resolution video with increasing megapixels compounds the storage demands, making efficient data management an urgent priority for organizations grappling with the immense volume of surveillance footage.

COVID-19 PANDEMIC

The pandemic severely impacted laboratories and research facilities worldwide. They shifted their focus towards studying the virus and developing solutions, while other research projects had to be halted/postponed. Supply chain disruptions and operational challenges, such as reduced staffing and limited access, slowed down research activities. Also, there
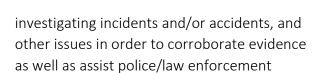
were funding constraints for research projects. Guidelines were issued to prevent the spread of COVID-19, but outbreaks still occurred.

USE OF VIDEO SURVEILLANCE AT LABORATORIES AND RESEARCH FACILITIES

Most laboratories and research facilities have video surveillance covering the following areas:

- Entry and exit points

- Experimentation areas

- Sample handling and preparation areas

- Cleanrooms

- Facilities where animals and plants are housed for research purposes

- Equipment rooms

- Server/IT rooms

- Storage areas

- Conference rooms and offices

- Common areas (lobbies, break rooms, cafeterias etc.)

- Restricted access areas

- Corridors

- Parking areas

Further, the concerned stakeholders at laboratories and research facilities generally need to review and analyse recorded CCTV video footage from time to time for

investigating incidents and/or accidents, and other issues in order to corroborate evidence as well as assist police/law enforcement agencies.

<u>USE OF THERMAL CAMERAS</u>

Laboratories and research facilities utilize thermal cameras for various purposes due to their ability to detect and visualize heat signatures. Here are some common applications of thermal cameras in such settings:

1. Temperature monitoring:

Thermal cameras are used to monitor and maintain temperature-controlled environments, such as cold storage areas, incubators, or cleanrooms. They can quickly identify temperature fluctuations or anomalies, helping to prevent damage to sensitive samples, equipment malfunctions, or compromised experimental conditions.

2. Equipment and machinery inspection:

Thermal cameras are employed to inspect and monitor the performance of equipment, machinery, and electrical systems within laboratories. By detecting overheating components or abnormalities in heat distribution, potential malfunctions or hazards can be identified early, allowing for timely maintenance or repair.

3. Fire detection and prevention:

Thermal cameras are effective tools for early fire detection. They can identify abnormal heat patterns or hotspots, enabling quick response and fire prevention measures.

When integrated with fire alarm systems, thermal cameras can trigger alerts and activate sprinklers or other fire suppression systems.

4. Energy efficiency and environmental monitoring:

Thermal cameras are utilized to assess energy efficiency within laboratories and research facilities. By visualizing heat loss or identifying areas of excessive heat or cold, energy conservation measures can be implemented. Additionally, thermal cameras can help monitor environmental conditions, such as HVAC performance or insulation integrity.

5. Animal research:

In laboratory settings involving animal research, thermal cameras can be used to monitor animal behavior, body temperature, or detect signs of distress. This can aid researchers in observing physiological responses, assessing thermal comfort, or identifying potential health issues in animals under study.

6. Contamination control:

Thermal cameras are employed to monitor cleanliness and contamination control measures in cleanrooms or sterile environments. By detecting temperature variations that may indicate leaks, infiltration, or improper air circulation, thermal cameras help maintain the integrity of controlled environments.

<u>VIDEO MONITORING OF EXPERIMENTS</u>

Video monitoring of experiments is carried out

in laboratories and research facilities to enhance the observation and analysis of scientific processes. Here are some key points regarding the use of video monitoring in experiments:

1. Experimental observation:

Video monitoring allows researchers to observe and document experiments in real-time. It provides a visual record of the entire experimental process, including sample preparation, reactions, changes in experimental conditions, and any unexpected occurrences.

2. Data collection:

Video monitoring helps researchers capture data that may be missed by other monitoring techniques. It allows for the collection of qualitative data, such as visual observations, behavioral patterns, and physical interactions, which can complement quantitative data obtained through sensors or instruments.

3. Analysis and review:

Video recordings enable researchers to review and analyze experiments more accurately and in detail. It allows for frame-by-frame analysis, precise measurements, and the identification of subtle changes or phenomena that may not be immediately apparent during the live observation.

4. Collaboration and communication:

Video recordings can be shared among researchers, collaborators, or students, facilitating communication and collaboration in scientific studies. It allows others to review

the experiment, provide feedback, or replicate the procedure for verification or further analysis.

5. Training and education:

Video monitoring of experiments is valuable for educational purposes. It can be used to train students or new researchers, demonstrating proper techniques, experimental setups, and safety procedures. Video recordings provide a visual learning resource that can be accessed repeatedly for effective training.

6. Experimental validation and reproducibility:

Video monitoring provides a means to validate experimental procedures and ensure reproducibility. By capturing the entire experiment, including setup, procedures, and outcomes, video recordings can serve as evidence of the experiment's integrity and aid in reproducing the results.

LIVE MONITORING – CHALLENGES

Some laboratories and research facilities have a dedicated control room with operators, set up for live monitoring of CCTV cameras. However, live monitoring comes with its own set of challenges of video blindness, poor attention span, boredom, operator bias, false alerts, and so on. Moreover, these cameras continuously capture and record humungous amounts of video data. It therefore becomes a daunting task for the operators to review and analyse this data whenever the need arises. Thus, it may be noted that benefits from video surveillance systems can accrue only when they are used optimally, suggestions for which are enumerated further on, in this document.

COMPLIANCE - GENERAL

Conformity or compliance in any organization means adherence to laws and/or rules and regulations, various standards, as well as data storage and security requirements as laid down by government bodies, governing bodies of the respective industry, or the management of the organization. When an organization complies with the requirements mandated by government and/or governing bodies, then it is termed as 'regulatory compliance' which enables the organization to run in a legal and safe manner.

COMPLIANCE - AUDITS

Several organizations carry out compliance audits on a regular basis to avoid the potential consequences of non-compliance.
A compliance audit examines how well an organization adheres to compliance requirements. Some organizations use video surveillance to monitor compliance issues and audit recorded CCTV video footage from time to time for investigating and preventing compliance issues. Auditing CCTV provides actionable insights on the level of compliance within the organization.

AUTOMATED SOFTWARE – WHY THEY WILL NOT WORK IN ISOLATION

In the wake of the Christchurch shooting incident, several high-profile places of worship considered deploying gun detection technology. However, there are concerns about its efficacy, since it may not be able to detect all types of weapons, or the perpetrator could still create damage before being detected. Similarly, automated systems like video analytics, AI/ML can only detect what they have been programmed for. What about the rest? Again, these technologies are prone to triggering huge amounts of false alarms. Also, since the permutation combinations of exceptions can be vast and varied, it becomes almost impossible to automate every kind of exception. Facial recognition technology also raises ethical and privacy concerns, and has been found to produce inaccurate results, especially for certain ethnic groups. Therefore, experts suggest that while automated technologies will continue to grow, human intervention and intelligence will still be necessary to verify alerts and ensure their efficacy.

"CCTV IS NOT ENOUGH – WE MAKE IT WORK FOR YOU"

While it is not being suggested that optimal usage of video surveillance can cure all issues, several issues of the following kind can be addressed by doing just a little 'more' with respect to making the optimal use of video surveillance systems:

- Unauthorized/unlawful activities/visitors

- Tampering of equipment

- Violence and vandalism

- Unruly staff/visitors/outside workers /security guards

- Health and safety issues

- Compliance issues

- Recces/suspicious movements/activities

- Insider job/security lapses

- Accidents/Causes of potential accidents

- Loss/theft

- Intrusions, especially by animals

- Inattentive staff (e.g. guard sleeping)

- Unclaimed/unattended objects

- Issues with female staff or visitors

- Cameras/recorder malfunctions

So, what is the 'more' that needs to be done?

1) AUDIT CCTV VIDEO FOOTAGE DAILY AS A STANDARD OPERATING PROCEDURE

'Auditing' means 'seeing' what the cameras 'saw'. Auditing of CCTV footage should be done daily (continuous investigation) to identify potential issues and threats. Auditing is a dedicated and systematic process that helps address challenges related to live monitoring and alert-based systems. Auditing helps in evaluating analyzing incidents to improve existing policies, procedures, and processes. Concerned personnel should be trained to become CCTV video footage auditors, and the audit teams should be rotated to avoid complacency/collusion. Daily auditing of CCTV footage can also help in adhering to the principles of Kaizen and TQM for business improvement.

2) DOCUMENT AUDIT FINDINGS/INCIDENTS

Audit findings/incidents should be documented in a standardized template to find the root cause to prevent future recurrences. Historical data of such findings /incidents can reveal patterns that can help take better informed corrective and preventive action. If all laboratories and research facilities report incidents in a standardized template, relevant authorities can derive business intelligence from the data and take action for the collective benefit of all laboratories and research facilities.

3) ENSURE DISASTER RECOVERY OF CCTV VIDEO FOOTAGE – LIKE A 'BLACKBOX'.

CCTV video footage must be stored at multiple locations in order to ensure that even if the recorder is stolen, destroyed or tampered with the data is never lost. Further, any backed-up data must easily be searchable and retrievable; else, it is going to be a nightmare finding the relevant video.

4) DISPLAY DYNAMIC INFORMATION AT RELEVANT PLACES

Document and display details of information that is dynamic in nature in relevant areas. For example:

1. List of authorized staff.

2. List of authorized security personnel deployed at the laboratory or research facility.

3. List of potential suspects/miscreants likely to visit the premises of the laboratory or research facility (a 'Watch out' list).

5) USE A POWERFUL NEW SIGNAGE

"WE AUDIT CCTV VIDEO FOOTAGE EVERYDAY".

One size, one color, one powerful message. Across the nation.

DE-CENTRALIZED SURVEILLANCE +
CENTRALIZED SURVEILLANCE = OPTIMAL
RESULTS

Organizations with multiple locations struggle
with centralized video surveillance due to
infrastructure cost, internet bandwidth, and
operator limitations. De-centralized
surveillance offers higher accountability at
each location and better situational
awareness, leading to more chances of
discovering exceptions.

CONCLUSION

"You see, but you do not observe" is a quote
by Sherlock Holmes in A Scandal in Bohemia
(1891, written by Sir Arthur Conan Doyle).
COM-SUR makes 'observation' far effortless
and effectual leading to superior results.

"Cameras don't lie" - but how will you know
unless you 'see' what the cameras 'saw'?
Audit CCTV - why suffer!

Get award-winning COM-SUR now.
Don't wait for things to go wrong!