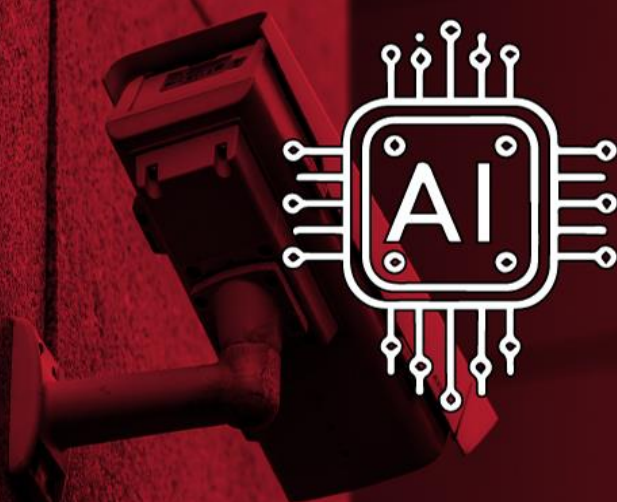


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"SEE WHAT THE CAMERA SAW"

THE FOOTAGE WHISPERER



'BETTER' AI VIA DAILY AUDITS NO MORE DATA WALL

100+ TOPICS - AIRPORTS TO ZOOS

GAUTAM D. GORADIA



UTILITY VALUE OF COM-SUR™ FOR BREWERIES

WELCOME



AUDIT HOURS OF FOOTAGE IN MINUTES FIND OUT HOW COM-SUR, THE BEST 'MOUSETRAP' WILL HELP

["Seeing is believing - See what the camera saw"](#)

CCTV and other forms of video surveillance are common in breweries 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/OTHER SURVEILLANCE VIDEO FOOTAGE AUDITING, SMART BACKUP, AND STANDARDIZED INTELLIGENT INCIDENT REPORTING SOFTWARE – THE MISSING PIECE OF CCTV/OTHER SURVEILLANCE VIDEO

COM-SUR is the world's only CCTV/surveillance 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/surveillance video 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/surveillance 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 and other surveillance cameras in a standardized way, leading to better decision-making. It also offers exceptional investigative capabilities.

BETTER AI VIA DAILY AUDITS – NO MORE DATA WALL

COM-SUR delivers 'BETTER' AI by transforming how organizations approach CCTV video

surveillance, auditing, and post-event analysis. By generating a constant stream of real-time, site-specific data—Continuous Frontier Data—COM-SUR ensures that AI systems are never starved for fresh, actionable insights, which is key for building custom models and addressing key challenges like data exhaustion, data walls, and data cascades that often hinder AI from performing at full potential.

A key to making AI more effective lies in continuous learning from real-world incidents through daily and post-event auditing. COM-SUR enables AI models to evolve based on audit findings and incidents that go beyond real-time detection. By auditing daily footage, capturing exceptions, and feeding this data back into AI models, COM-SUR significantly improves the accuracy of AI systems, helping to reduce false alarms and enhance detection capabilities. This continuous feedback loop ensures that AI learns from what might have been missed in real-time, making it smarter and more reliable over time.

By integrating Reinforcement Learning from Human Feedback (RLHF) and Explainable AI (XAI), COM-SUR ensures that AI systems are continuously refined, transparent, responsible, and contextually aware. However, recognizing that AI can only perform tasks it's programmed for, human intelligence and intervention remain essential in verifying and refining AI outcomes. With COM-SUR, businesses can leverage AI as a powerful tool while maintaining human oversight, ensuring more accurate and informed decision-making—ultimately leading to 'BETTER' AI. This not only enhances surveillance but also paves the way for Augmented Intelligence, where AI-driven insights empower human operators while keeping them at the center of decision-making.

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 image 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 images, 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 BREWERIES

1. Theft and vandalism:

Breweries may be targeted for theft of raw materials, finished products, or equipment. Vandalism is also a concern, and both can result in financial losses and production disruptions.

2. Unauthorized access:

Controlling access to sensitive areas within the brewery is crucial. Unauthorized access can lead to safety hazards, product contamination, or theft of intellectual property.

3. Compliance issues:

Breweries need to comply with various regulations related to production, safety, and environmental standards. Failure to meet

compliance requirements can result in fines, legal issues, and damage to the brewery's reputation.

4. Quality control:

Consistency in product quality is essential for building customer loyalty. Breweries need to implement stringent quality control measures to ensure that each batch meets the desired standards.

5. Fire hazards:

The brewing process involves various elements that can contribute to fire hazards, and the presence of flammable materials, high temperatures, and the use of electrical equipment make fire safety a critical consideration for breweries.

6. Employee safety:

Ensuring the safety of brewery employees is a priority. This includes implementing safety measures to prevent accidents, providing training on handling equipment, and maintaining a secure work environment.

7. Waste disposal:

Dealing with brewery waste, including spent grains, wastewater, and packaging materials, requires careful planning.

8. Insider threats:

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

9. 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.

USE OF VIDEO SURVEILLANCE AT BREWERIES

Most breweries have video surveillance covering the following areas:

- Entry and exit points
- Production and brewing areas
- Storage facilities
- Distribution and loading docks
- Taprooms and retail spaces
- Utility and equipment rooms
- Waste disposal areas
- Employee areas
- Parking areas

Further, the concerned stakeholders at breweries analyse recorded CCTV video footage from time to time in order to investigate incidents, accidents, and other issues as well as assist Police/other Law Enforcement Agencies.

USE OF DRONES

Drones are increasingly being utilized in the brewing industry, for monitoring and surveillance purposes. Here are some ways in which drones are used to monitor breweries:

1. Security patrols:

Drones equipped with cameras conduct security patrols over the brewery premises, providing real-time video feeds to security personnel. This helps in identifying any potential security breaches, unauthorized access, or suspicious activities.

2. Perimeter surveillance:

Drones are programmed to fly along the perimeter of the brewery, monitoring fences, gates, and other access points. This enhances overall security by detecting and alerting authorities to any breaches.

3. Monitoring large outdoor areas:

Breweries with extensive outdoor facilities, such as hop fields or large storage yards, deploy drones to monitor these areas efficiently. Drones equipped with high-resolution cameras or even thermal imaging cameras help identify issues or anomalies in large spaces.

4. Emergency response:

In the case of emergencies or incidents, drones quickly survey the situation from the air, providing valuable information to emergency responders. This is especially useful in situations like fires, chemical spills, or other hazardous incidents.

5. Asset monitoring:

Drones are used to inspect and monitor brewery assets, such as tanks, pipelines, and equipment, providing a visual assessment of their condition. This aids in preventive maintenance and reduce downtime.

6. Environmental monitoring:

Drones equipped with sensors can be employed to monitor environmental factors around the brewery, such as air quality, water quality, or temperature. This is particularly important for breweries with a commitment to sustainability and environmental responsibility.

7. Inspections of inaccessible areas:

Drones access areas that may be difficult or unsafe for humans to reach, such as rooftops, towers, or other elevated structures. This streamlines routine inspections and maintenance activities.

8. Event monitoring:

During large events or festivals hosted by breweries, drones are used for crowd monitoring, traffic management, and overall event security.

USE OF THERMAL CAMERAS

Thermal cameras are utilized in breweries for various purposes due to their ability to detect and visualize heat radiation. Here are several ways in which thermal cameras are used in breweries:

1. Equipment monitoring:

Thermal cameras are used to monitor the temperature of critical brewing equipment such as boilers, kettles, and fermentation vessels. Anomalies in temperature could indicate potential issues or malfunctions that need attention.

2. Quality control:

Thermal cameras assist in quality control by ensuring that certain processes, such as pasteurization or cooling, are occurring at the correct temperatures. This helps in maintaining the quality and safety of the final product.

3. Detecting electrical issues:

Thermal cameras are effective in identifying overheating electrical components. This is crucial in breweries where electrical equipment, such as motors, pumps, and control panels, is extensively used. Early detection of electrical issues reduces the risk of electrical fires.

4. Monitoring barrel fermentation:

Some breweries use thermal cameras to monitor the temperature of barrels during fermentation. This is especially relevant for breweries that engage in barrel aging of beer, ensuring that the fermentation process is proceeding as intended.

5. Detecting insulation issues:

Thermal cameras are used to identify insulation problems in pipes or tanks. In breweries, where temperature control is critical, detecting insulation issues helps in maintaining

the efficiency of heating and cooling systems.

6. Security monitoring:

Thermal cameras are used for security purposes to monitor the brewery premises during low-light or nighttime conditions. They detect and capture images of intruders or unusual activity based on differences in heat signatures.

7. Monitoring wastewater treatment:

Breweries often have wastewater treatment facilities. Thermal cameras help monitor the temperature of water in these processes, ensuring that the treatment is effective and complies with environmental regulations.

8. Energy efficiency:

Thermal cameras contribute to energy efficiency by identifying areas where heat is escaping or being wasted. Breweries use this information to optimize insulation and heating or cooling systems, reducing energy consumption.

9. Fire prevention:

Thermal cameras play a role in fire prevention by detecting abnormal heat patterns that may indicate a potential fire hazard. Early detection allows for prompt intervention and mitigates the risk of fire.

LIVE MONITORING – CHALLENGES

Several breweries 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 video footage from time to time for investigating and preventing compliance issues. Auditing video footage provides actionable insights on the level of compliance within the organization.

"CCTV AND OTHER FORMS OF VIDEO SURVEILLANCE ARE 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:

- Intrusion, especially by animals
- Fraud/loss/corruption/theft
- Potential contaminating factors
- Vandalism
- Quality assurance issues
- Compliance and legal issues
- Accidents/Causes of potential accidents
- Negligence
- Human rights violations
- Insider job/security lapses
- Recces/suspicious movements/activities
- Unauthorized/unlawful activities
- Housekeeping issues
- Potential hazards
- Inattentive staff (e.g. guard sleeping)
- Issues with female staff and/or visitors

- Cameras/recorder malfunctions

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

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

'Auditing' means 'seeing' what the cameras 'saw'. Auditing of CCTV and other surveillance video 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 video footage auditors, and the audit teams should be rotated to avoid complacency/collusion. Daily auditing of CCTV and other surveillance video 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 breweries report incidents in a standardized template, relevant authorities can derive business intelligence from the data and take action for the collective benefit of the brewing industry.

3) ENSURE DISASTER RECOVERY OF CCTV AND OTHER SURVEILLANCE VIDEO FOOTAGE – LIKE A 'BLACKBOX'

CCTV and other surveillance video footage must be stored at multiple locations in order to ensure that even if the recorder/storage device 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 authorised security personnel deployed at the brewery.
2. List of authorised staff (with their duty timings and allotted locations) at the brewery.
3. List of habitual offenders/suspects likely to visit the brewery (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.

NEW SKILL – ‘CCTV VIDEO FOOTAGE AUDITOR’

In a groundbreaking move, the Ministry of Skill Development of India has established National Occupational Standards for the crucial skill of CCTV Video Footage Auditing. The Ministry of Education has also introduced a course to teach this skill to students in grades 11 and 12. This initiative will not only create new job opportunities and business ventures for those seeking a fresh career path but also for retirees from both the armed forces and the private sector. Additionally, this skill will help activate the millions of CCTV cameras currently underutilized, bringing them out of 'sleep mode' and enhancing their effectiveness.

CONCLUSION

"You see, but you do not observe"—a famous quote by Sherlock Holmes in A Scandal in Bohemia (1891, by Sir Arthur Conan Doyle)—perfectly illustrates the need for human insight in surveillance. While computers can 'see,' it is human observation that truly interprets and acts on what is seen. COM-SUR simplifies and enhances this critical process, leading to more effective and insightful results.

"Cameras don't lie"—but how will you know unless you 'see' what the cameras 'saw'? Don't wait for things to go wrong. Start auditing your CCTV footage with award-winning COM-SUR today.

In closing, we present three guiding principles that will revolutionize video surveillance:

1. Auditing is fundamental—everything else is peripheral.
2. Cameras have lenses—humans have eyes.
3. Let's make cameras 'accountable.'