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THE FOOTAGE WHISPERER

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UTILITY VALUE OF
COM-SUR™ FOR
HAZARDOUS MATERIALS
STORAGE AND
HANDLING FACILITIES

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 surveillance is common in hazardous materials storage and handling 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 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 HAZARDOUS MATERIALS STORAGE AND HANDLING FACILITIES

1. Chemical spills and contamination:

Accidental spills or releases of hazardous materials can occur during storage or handling operations, leading to environmental contamination and health risks.

2. Fire and explosions:

Hazardous materials are often flammable, reactive, or explosive, posing a significant risk of fire or explosions.

3. Worker safety:

The health and safety of workers in hazardous materials storage facilities are paramount. Exposure to toxic substances, risks of chemical burns, inhalation hazards, and physical injuries from handling equipment are some of the occupational hazards faced by workers.

4. Unauthorized access:

One of the primary security threats is unauthorized access to the facilities. This can lead to theft, sabotage, or unauthorized handling of hazardous materials. Intruders may attempt to breach perimeter security, bypass access controls, or gain entry using fraudulent means.

5. Theft and diversion:

Hazardous materials are susceptible to theft or diversion due to their potential value or use in illegal activities.

6. Sabotage:

Hazardous materials storage facilities face the risk of deliberate acts of sabotage which can cause severe damage to the facility, release harmful substances, and endanger lives.

7. Compliance issues:

Hazardous materials storage and handling facilities are subject to strict regulations and compliance requirements. Meeting these requirements can be challenging due to the complex nature of hazardous materials and the need for specialized storage and handling procedures.

8. Insider threats:

Hazardous materials storage and handling facilities 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 HAZARDOUS MATERIALS STORAGE AND HANDLING FACILITIES

Most hazardous materials storage and handling facilities have video surveillance covering the following areas:

- Entry and exit points
- Storage areas
- Loading and unloading zones
- Spill containment areas
- High-security areas
- Parking and other outdoor areas

Further, the concerned stakeholders at hazardous materials storage and handling 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/other Law Enforcement Agencies.

USE OF THERMAL CAMERAS

Thermal cameras detect and capture infrared

radiation emitted by objects and individuals based on their heat signatures. They are used in hazardous materials storage and handling facilities for the following purposes:

1. Temperature monitoring:

In hazardous materials storage and handling facilities, thermal cameras are used to monitor temperature-sensitive areas, equipment, and processes. They can detect abnormal heat patterns that may indicate equipment malfunctions, overheating, or leaks in containment systems. By identifying such anomalies early, thermal cameras help prevent accidents, mitigate risks, and ensure the integrity of hazardous materials storage.

2. Fire detection:

Thermal cameras aid in identifying potential fires or hotspots within the facility. They can detect heat signatures that may indicate the presence of fire or smouldering (the process of burning without flame), allowing for prompt response and firefighting efforts.

3. Security monitoring:

Thermal cameras assist in identifying individuals or unauthorized personnel within hazardous materials storage areas. By detecting their heat signatures, thermal cameras can help security personnel detect and respond to potential security breaches or unauthorized access attempts.

LIVE MONITORING – CHALLENGES

Several hazardous materials storage and handling 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.

AI - HOW TO MAKE IT MORE EFFECTIVE

The solution to making AI more effective lies in continuous learning from real-world incidents through post-event auditing. COM-SUR provides exactly this capability, enabling 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, the accuracy of AI systems can be significantly improved, helping to reduce false alarms and enhance detection capabilities.

Auditing ensures that AI learns from what might have been missed in real-time, allowing it to adapt to the unique requirements of different environments. Whether it's improving facial recognition accuracy or refining anomaly detection, this continuous feedback loop makes AI smarter and more reliable over time.

However, it's essential to recognize that AI, like any automated technology, can only perform tasks it's programmed for. It cannot account for every possible scenario or exception, leaving certain areas outside its programmed scope. This is why human intelligence and intervention will always play a vital role in verifying and refining AI outcomes.

"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:

- Operational issues
- Potential hazards
- Health and safety issues
- Compliance issues
- Accidents/Causes of potential accidents
- Potential causes of fires
- Recces/suspicious movements/activities
- Insider job/security lapses
- Inadequate personal protective equipment (PPE)
- Designated staff not present/shortage of staff/unskilled staff
- Improper handling and management of material
- Equipment malfunction/other technical issues
- Violence and vandalism
- Staff negligence
- Inadequate/defective illumination/lighting and ventilation conditions
- Unauthorized/unlawful activities/visitors
- Fraud/loss/corruption/theft
- Intrusions, especially by animals

- Inattentive staff (e.g. guard sleeping)

- Unruly staff/security guards

- Unclaimed/unattended objects

- Issues with female staff

- 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 hazardous materials storage and handling 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 hazardous materials storage and handling 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 hazardous materials storage and handling facility.
3. List of potential suspects/miscreants likely to visit the premises of the hazardous materials storage and handling 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.

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.

AI WHERE YOU NEED IT, HI ALL THE TIME – THE AUGMENTED INTELLIGENCE MANTRA

The true power of COM-SUR lies in its ability to seamlessly integrate AI and Human Intelligence (HI) into a cohesive, Augmented Intelligence system. With COM-SUR, AI can be leveraged when needed to enhance analysis and generate insights, while HI remains at the core of the system's operation, ensuring that the technology is always accessible, intuitive, and responsive to human needs. This balance between AI and HI is what defines Augmented

Intelligence, making COM-SUR a revolutionary tool that elevates the entire surveillance industry.

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.'**