com sur™

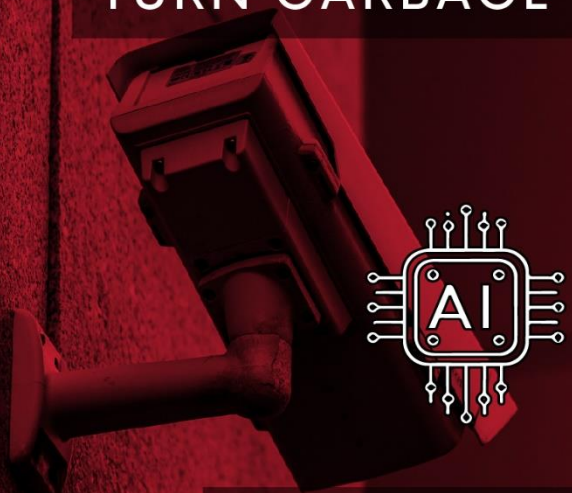
the missing piece of CCTV

GET THE BOOK
INTERNATIONAL PRICING

"SEE WHAT THE CAMERA SAW"

IN 95% LESS TIME

KNOW WHAT YOU DON'T KNOW
TURN GARBAGE TO GOLD



BUILD 'BETTER' AI
POWERED BY DAILY AUDITS

100+ SECTORS - AIRPORTS TO ZOOS

GAUTAM D. GORADIA

UTILITY VALUE OF COM-SUR FOR WASTE AND SEWAGE MANAGEMENT FACILITIES

FROM FOOTAGE TO INTELLIGENCE: PRACTICAL SURVEILLANCE GOVERNANCE

Dark Data: Surveillance footage is the world's largest source of unreviewed operational evidence, yet almost none of it is ever analyzed. In every enterprise, it is the single biggest category of 'dark data': recorded every second, stored at high cost, and then ignored unless something goes wrong. The result is predictable: organizations operate with blind spots despite having cameras everywhere.

This challenge underscores the need for structured visual governance, a discipline where custodians routinely audit footage, ensuring cameras function as accountable instruments rather than passive recorders.

COM-SUR fixes this blind spot. It creates an Executive Summary of the entire day across multiple cameras, turning hours of footage into minutes. It works with all existing cameras and any standard VMS (true video management systems built on conventional architectures), enables standardized intelligent incident reporting, offers exceptional investigative capability, reduces data size, and helps users identify information that would otherwise remain unnoticed.

"Seeing is believing. See what the camera saw. Know what you don't know."

COM-SUR: THE MISSING PIECE OF CCTV

COM-SUR is the world's only CCTV video footage auditing, smart backup, and standardized intelligent incident-reporting software. It gives organizations the workflow layer that video surveillance has always lacked. COM-SUR enables teams to go through 24 hours of footage in minutes, reduces data size significantly, and ensures that every incident or exception is documented in a consistent,

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review-ready format.

Its investigative tools help uncover what traditional playback would never reveal, strengthening compliance, security, and overall operational control. Just as MS Office became the universal productivity layer for documents and spreadsheets, COM-SUR becomes the productivity layer for CCTV, making it easy for teams to work with visual data in a structured, standardized way. COM-SUR also supports the government-recognized profession of 'CCTV Video Footage Auditor', enabling new jobs and business opportunities while finally getting full value from every camera.

'BETTER' AI VIA DAILY AUDITS: NO MORE DATA WALL

COM-SUR enables 'BETTER' AI by supplying continuous, site-specific frontier data generated from daily and post-event audits. Its Daily CCTV Video Footage Auditing Chart creates a structured feedback loop where exceptions, errors, and new findings are captured in a consistent format and shared with the AI provider. This eliminates data walls, data exhaustion, and data cascades by ensuring AI models are trained and refined on real-world situations rather than only real-time detections. Combined with basic annotation, the chart becomes a practical RLHF mechanism, while daily verification of AI outputs supports XAI. The result is straightforward: AI becomes more accurate, more explainable, and aligned with ground reality, with human oversight always in control.

HOW COM-SUR SMARTLY REDUCES 'VIDEO' STORAGE SIZE

COM-SUR reduces storage requirements by converting continuous video into a sequence of time-stamped images generated at fixed intervals (default: one second). Each image reflects the exact visual state of that moment across all active camera views, preserving the full timeline without the heavy data load of traditional video.

Because COM-SUR works on the consolidated view shown on the screen, multiple cameras displayed in a grid (for example, 4×4) are recorded as one single image instead of sixteen separate video streams. This dramatically cuts storage needs and review effort while retaining every critical visual detail.

The outcome is decisive: 24 hours of footage become 86,400 audit-grade images per viewport, reducing review time by approx. 95% while keeping the entire day fully intact and auditable.

CHALLENGES FACED BY WASTE AND SEWAGE MANAGEMENT FACILITIES

1. Safety hazards: Waste and sewage management facilities house hazardous materials and equipment, posing various safety issues.

2. Environmental hazards: Waste and sewage management facilities may pose environmental hazards, and need to ensure that their operations are conducted safely and do not pose a risk to public health.

3. Fire and explosions: Waste and sewage management facilities face the risk of fires or explosions, particularly in areas where flammable materials or gases are present. Fires can cause extensive damage to infrastructure, equipment, and stored waste, leading to operational disruptions and potential

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environmental pollution.

4. Unauthorized access: Waste and sewage management facilities need to ensure that only authorized personnel are allowed inside the premises, and that visitors do not have access to restricted areas.

5. Theft and vandalism: Waste and sewage management facilities need to protect their facilities and equipment from theft, vandalism, and other types of criminal activity.

6. Illegal dumping: Illegal dumping of waste or hazardous materials at or near waste and sewage management facilities can pose environmental risks and regulatory compliance issues.

7. Compliance issues: Waste and sewage management facilities need to comply with regulations related to environmental protection and public health, and ensure that their operations are conducted in an environmentally responsible manner.

8. Insider threats: Waste and sewage management 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.

The challenges outlined above are not merely operational risks; they represent governance vulnerabilities. In environments where safety, compliance, and public trust are critical, surveillance infrastructure must function as an active prevention mechanism rather than a passive recording archive. A structured visual governance framework ensures that existing surveillance systems are routinely reviewed, documented, and institutionally embedded within operational discipline.

USE OF VIDEO SURVEILLANCE AT WASTE AND SEWAGE MANAGEMENT FACILITIES

Most waste and sewage management facilities have video surveillance covering the following areas:

- Entry and exit points
- Storage areas
- Loading and unloading areas
- Processing areas
- Odor control systems
- Transfer stations
- Incinerators and landfills
- Equipment maintenance areas
- Hazardous material handling areas
- Recycling facilities
- Reception and lobby areas
- Fleet parking areas
- Administrative offices
- Outdoor areas

Further, the concerned stakeholders at waste and sewage management facilities generally need to review and analyse recorded CCTV video footage from time to time for investigating incidents and/or accidents, and

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other issues in order to corroborate evidence as well as assist Police/other Law Enforcement Agencies.

Further, waste and sewage management facilities may use other forms of video surveillance as follows:

1. Thermal imaging cameras: Thermal imaging cameras are capable of detecting heat signatures, which are useful for identifying and monitoring temperature changes in storage tanks, pipelines, and other equipment. These cameras can also detect abnormal hotspots that may indicate potential equipment failure or other issues.

2. Underwater cameras: Underwater cameras are used to monitor and inspect sewage pipelines, treatment systems, and other underwater infrastructure. These cameras are typically designed to withstand harsh environmental conditions and can provide clear images of underwater areas.

3. Mobile cameras: Mobile cameras are used to monitor and inspect remote or hard-to-reach areas of the facility. These cameras can be mounted on vehicles, drones, or other equipment and can be remotely controlled to capture images and video in real-time.

LIVE MONITORING CHALLENGES

Several waste and sewage management facilities have a dedicated control room with operators, set up for live monitoring of CCTV and other cameras. However, live monitoring suffers from well-known limitations such as operator fatigue, poor attention span, video blindness, boredom, bias, and high false-alert rates. Cameras also record massive amounts of video continuously, making it unrealistic for operators to review or analyse footage effectively when required. The real value of surveillance systems is realized only when the footage is used optimally, as outlined in the following sections.

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 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”

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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:

- Safety hazards
- Environmental hazards
- Health and safety issues
- Compliance issues
- Recces/suspicious movements/activities
- Staff negligence
- Inattentive staff (e.g. guard sleeping)
- Insider job/security lapses
- Unauthorized/unlawful activities/visitors
- Loss/theft
- Vandalism
- Intrusion, especially by animals
- Housekeeping issues
- Issues with female staff
- 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. In simple terms, it is efficient review and analysis of recorded visuals, which is where COM-SUR excels. Unlike legacy playback, COM-SUR makes review practical by reducing the review workload and avoiding the typical performance bottlenecks that slow down traditional systems.

Daily auditing ensures continuous investigation, identifies exceptions early, and overcomes the limitations of live monitoring and alert-based systems. It also strengthens policies, processes, and internal controls. Personnel must be trained as CCTV Video Footage Auditors and audit teams rotated to avoid complacency or collusion.

2) DOCUMENT AUDIT FINDINGS/INCIDENTS

Audit findings/incidents should be recorded in a standardized template to establish root causes and prevent recurrence. Over time, this structured history reveals patterns that support corrective and preventive action. When entire sectors follow a standardized reporting format, the data produces meaningful business intelligence.

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

CCTV and other surveillance video data must exist in multiple locations, so it is not lost through theft, tampering, fire, hardware failure, or insider jobs. Backups must also be easily searchable and retrievable; otherwise, locating relevant footage becomes unreliable and time-consuming.

4) DISPLAY DYNAMIC INFORMATION AT RELEVANT PLACES

Document and display key operational information that changes frequently, such as:

1. Authorized staff with duty timings and locations
2. Authorized external visitors (contractors, suppliers, etc.)
3. Security personnel on duty
4. Habitual offenders or individuals of concern (a "Watch Out" list)

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5) USE A POWERFUL NEW SIGNAGE

"WE AUDIT CCTV VIDEO FOOTAGE EVERY DAY".

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

Across sectors, structured visual governance transforms surveillance from reactive evidence storage into a proactive prevention and reinforcement layer. When institutionalized, this discipline strengthens operational reliability, improves documentation clarity, and enhances early detection capability without expanding surveillance powers or centralizing control.

"You see, but you do not observe." This line captures a core truth in surveillance: cameras may record, but outcomes improve only when humans routinely observe, interpret, and act. COM-SUR makes this practical by enabling disciplined daily audits and structured documentation. Cameras do not lie, but you will not know what they saw unless you review what was recorded. Do not wait for something to go wrong. Make daily auditing a standard operating practice.

In closing, these three guiding principles define the basic ethos of visual governance and what it takes to overcome the sub-optimal results being achieved today:

1) Auditing is fundamental. Everything else is peripheral.

2) Cameras have lenses. Humans have eyes.

3) Make cameras accountable.

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