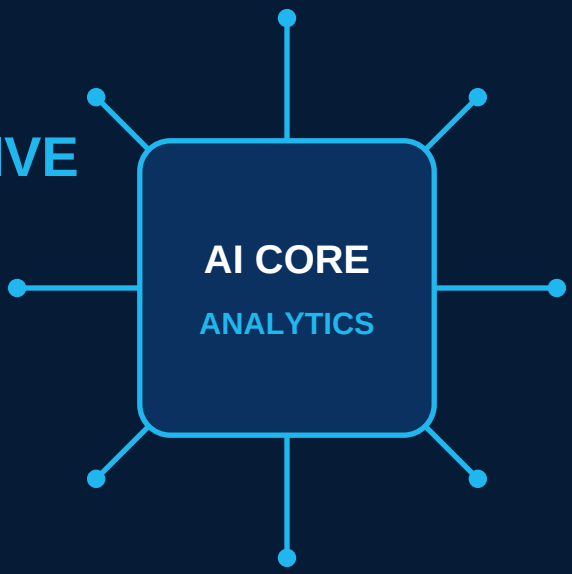
VIDEO GUARD

TECHNICAL REPORT

# AI CORE ANALYTICS

## PROPRIETARY ENGINE DEEP DIVE




VideoGuard's approach to turning raw municipal video into classified events, actionable alerts and investigation-ready context - with intelligence positioned close to the source and coordinated through the VideoGuard platform.

### THE OPERATING PROBLEM

Traditional surveillance produces more video than personnel can continuously observe. The operational requirement is not simply to record more footage; it is to identify activity that matters, reduce irrelevant review and make useful video easier to act on.

### VIDEOGUARD'S APPROACH

AI Core Analytics is the intelligence layer behind the VideoGuard architecture. It is designed to analyze video events near the source, apply event-classification logic, attach useful metadata and pass relevant information into the centralized workflow.

**CAPTURE → ANALYZE → CLASSIFY → PRIORITIZE → ACT**

ENGINE MODEL

# FROM VIDEO STREAM TO CLASSIFIED EVENT

The engine is best understood as a processing pipeline. Each stage narrows raw visual information into structured event context that can support alerts, search, review and investigation.

### 01 CAPTURE

Camera video enters the local processing workflow.

### 02 DETECT

Candidate objects, motion or activity are identified.

### 03 EXTRACT

Relevant visual and temporal features are evaluated.

### 04 CLASSIFY

Models and event logic assign an event category.

### 05 SCORE

Confidence and contextual rules help prioritize the result.

### 06 PUBLISH

Event metadata, alert and/or relevant clip enter the platform.

## WHY PROCESS NEAR THE SOURCE?

### LOWER LATENCY

Local inference avoids unnecessary network round trips for initial event decisions.

### LOWER BANDWIDTH

Metadata and relevant clips can be prioritized over indiscriminate upstream video.

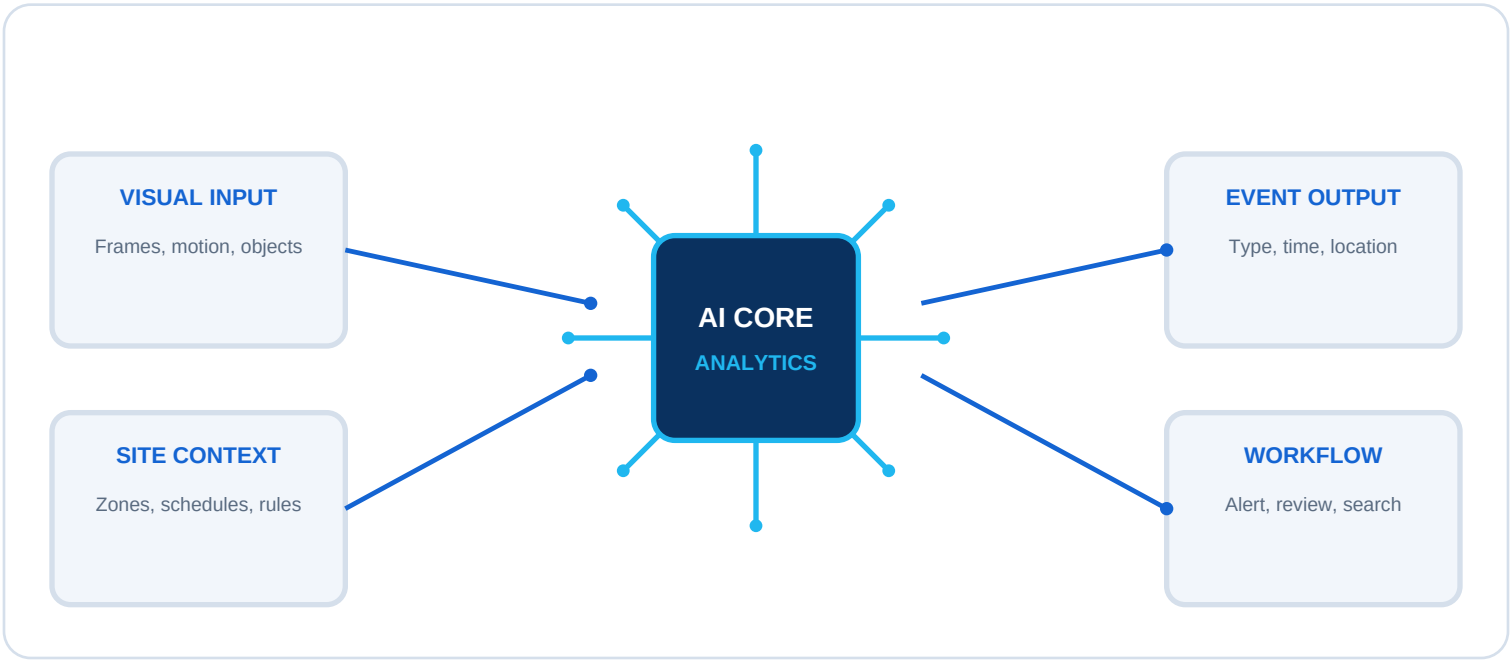
### RESILIENCE

Local analytics can continue when WAN connectivity is constrained or intermittent.

CLASSIFICATION

# HOW EVENT CLASSIFICATION IS STRUCTURED

High-quality classification depends on more than a single model output. A production analytics engine must combine visual inference with event context, confidence handling and operational rules before an event becomes useful to an agency.




## CLASSIFICATION LAYERS

### MODEL INFERENCE

Machine-learning models evaluate visual patterns and candidate objects or activity.

### TEMPORAL CONTEXT

The engine considers behavior across time rather than treating every frame as an isolated decision.

### ZONE & RULE CONTEXT

Agency-defined areas, schedules and event rules can shape when activity becomes operationally relevant.

### CONFIDENCE HANDLING

Classification confidence can be used to prioritize or suppress uncertain results based on the use case.

### EVENT PACKAGING

Structured metadata and relevant video context are associated with the event for downstream workflow.

### HUMAN REVIEW

For consequential workflows, analytics should support trained personnel rather than substitute for judgment.

VIDEO GUARD

OPERATIONS

# DESIGNING FOR ACCURACY WITHOUT ALERT FATIGUI

A useful public-safety analytics system must balance sensitivity with operational relevance. Maximizing detections alone can create excessive alerts; overly aggressive filtering can hide important activity. The objective is controlled, measurable classification behavior.

## THE CLASSIFICATION BALANCE


## CONTROL MECHANISMS

### CONFIDENCE THRESHOLDS

Set acceptance levels appropriate to the event type and operational consequence.

### REGION-OF-INTEREST RULES

Focus analytics on relevant lanes, entrances, perimeters, dumping areas or other defined zones.

### TIME & SCHEDULE LOGIC

Differentiate expected daytime activity from after-hours or restricted-period behavior.

### EVENT PERSISTENCE

Require activity to persist long enough to distinguish meaningful behavior from transient noise.

### SUPPRESSION / COOLDOWN

Reduce repeated notifications from the same continuing condition where appropriate.

### MODEL & RULE REVIEW

Use field observations to refine configurations as environments, missions and conditions change.

**IMPORTANT** No universal accuracy percentage should be claimed without a defined dataset, event taxonomy, test protocol and operating environment.

VIDEOGUARD MODEL

# INTELLIGENCE AT THE EDGE.
# CONTROL IN THE PLATFORM.

AI Core Analytics fits into a broader VideoGuard architecture that combines VPU™ fixed deployments, MVR™ mobile deployments, flexible connectivity and centralized video/event management.

| | | |
|---|---|---|
| 01 | **VPU™ / MVR™** | Capture video at the mission location. |
| 02 | **AI CORE** | Detect, classify and structure events near the source. |
| 03 | **CONNECTIVITY** | Move relevant metadata, alerts and clips through the available network. |
| 04 | **PLATFORM** | Centralize authorized review, search, investigation and system oversight. |
| 05 | **PERSONNEL** | Deliver useful context to the people responsible for decisions and response. |

## WHAT MAKES THE ENGINE PROPRIETARY?

VideoGuard's proprietary value is the orchestration of its analytics pipeline, event logic, edge-to-platform workflow and operational configuration. Specific model architectures, training data, weighting, thresholds and implementation details remain proprietary and are not disclosed in this public technical overview.

**videoguard.ai**