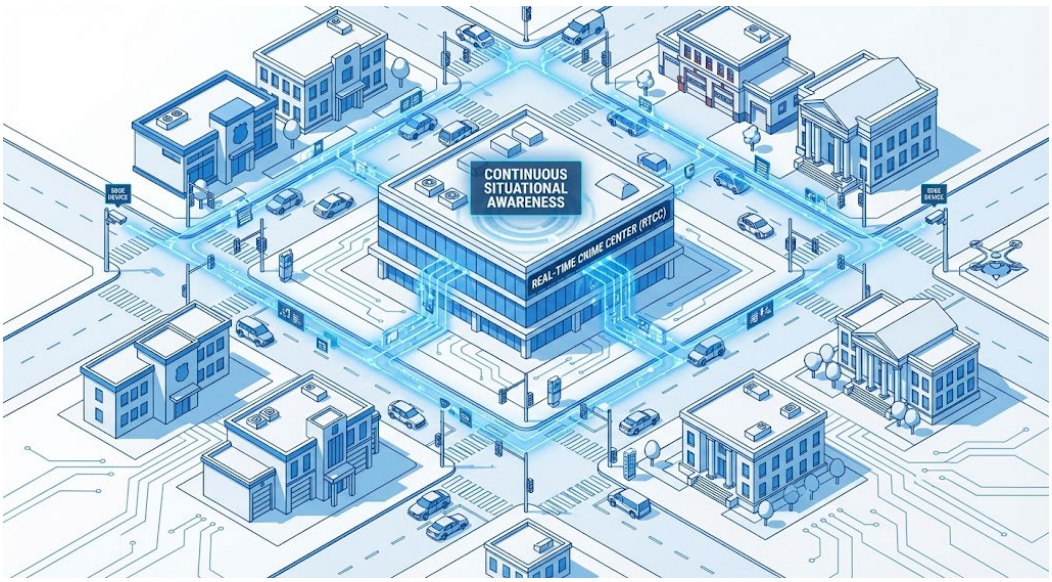
Vega Systems Inc.

The Immune System for Video Infrastructure



USE CASE DOCUMENTATION

Safe Cities & Public Safety

Connecting the Real-Time Crime Center (RTCC) to the Street

February 2026 | Version 2.0

Executive Summary

Modern cities face unprecedented challenges in maintaining public safety while managing complex, distributed video surveillance infrastructure. City infrastructure is inherently messy—pole cameras rely on fluctuating cellular networks, agencies operate in silos, and cyber incidents can turn traditional redundancy into a liability.

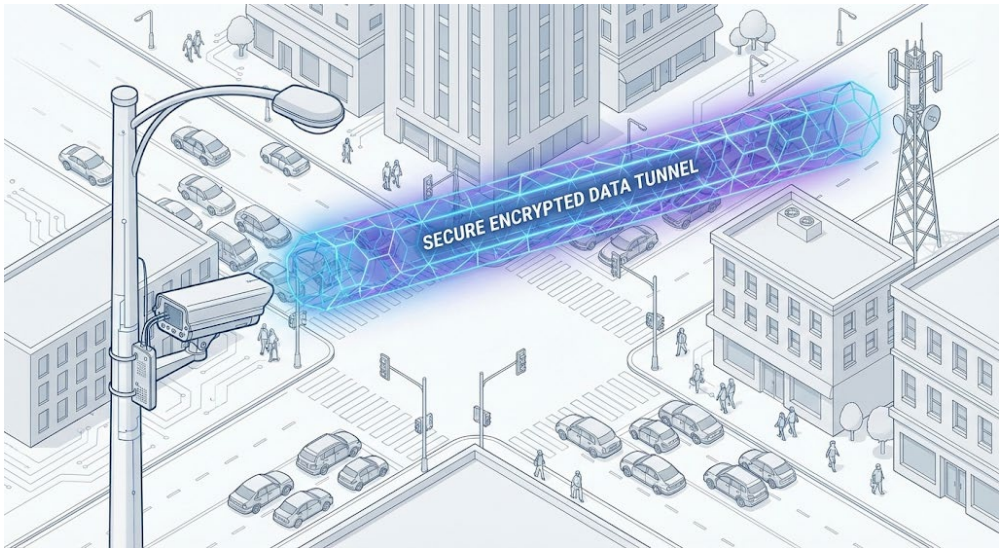
Vega Systems provides the resilience backbone that keeps Real-Time Crime Centers (RTCCs) online and critical video available when infrastructure fails. From wireless pole cameras to citywide operations, our integrated product suite bridges connectivity, continuity, and evidence integrity.

This document outlines specific use cases in which Vega products—Atlas, SureStream, RMF, Nidhi, and XPort—address the unique challenges of safe city deployments.

Vega Product Suite for Safe Cities

Product	Category	Primary Function
Atlas	Connectivity	Secure edge transport over cellular networks
SureStream	Continuity	Client-side failover when servers fail
RMF	Continuity	Cyber-secure active-active redundancy
Nidhi	Continuity	Media backup and restore for hardware failures
XPort	Migration	Automated XProtect content migration

Use Case 1: Wireless Pole Cameras



The Challenge

"We deployed cameras in high-crime intersections, but the 4G signal is so weak that the video is unusable."

City streets do not always have fiber connectivity. Pole cameras deployed at strategic intersections must rely on cellular networks (4G/5G/LTE) to transmit video back to RTCC. These networks are inherently unpredictable—signal strength fluctuates with weather, congestion, and physical obstructions, resulting in choppy, delayed, or completely unusable video feeds.

The Solution: Atlas

Atlas software runs on ruggedized edge routers and optimizes video transport over fluctuating cellular networks. It maintains a stable stream from pole cameras back to the RTCC, even in congested or weak cellular coverage.

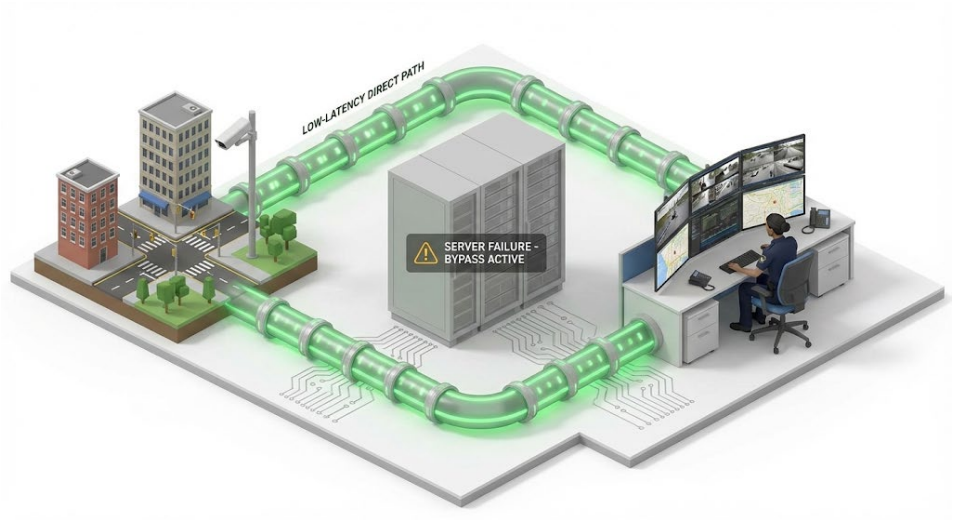
Key Capabilities

- Outbound-Only Cloak: Zero open ports or public IP addresses
- Adaptive Stream Switching: Real-time jitter and packet loss detection with dynamic stream adjustment
- Universal VMS Translation: Standard ONVIF output to Milestone, Genetec, or any VMS
- Centralized Fleet Management: Monitor all devices from a single dashboard

Business Impact

Cities can deploy cameras in previously unreachable locations without the need for expensive fiber installation. RTCC delivers consistent, high-quality video streams, turning previously unmonitored areas into actively supervised zones.

Use Case 2: Real-Time Crime Center (RTCC) Server Failure



The Challenge

"When all servers go down, dispatch screens go dark."

In standard Milestone XProtect architecture, video must pass through the Recording Server. This creates a critical single point of failure. If the Recording Server fails or SQL goes offline, the Smart Client loses connection immediately and the screen goes black—exactly when operators need visibility most.

The Solution: SureStream

SureStream provides a failover playback path directly from the camera to the operator, ensuring critical views remain available even when VMS servers are unavailable. It creates a direct, resilient path between cameras and clients.

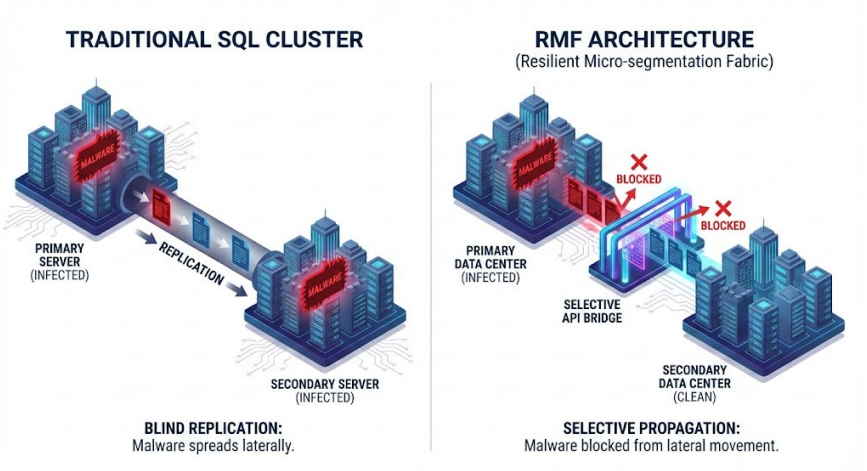
Key Capabilities

- Always-On Visibility: Maintain eyes-on-glass even when servers go dark
- Native Integration: Operates 100% inside Milestone XProtect Smart Client
- No Additional Hardware: Enterprise-grade resilience without doubling infrastructure
- Rapid Deployment: From installation to redundancy in minutes

Business Impact

In an active emergency, losing visibility is unacceptable. SureStream ensures operators maintain situational awareness during server failures, whether due to routine maintenance or catastrophic events.

Use Case 3: Cyber-Aware City Redundancy



The Challenge

"We built redundancy with database replication. During a cyber incident, the corruption spread to the backup—both systems went down."

Traditional replication engines stream every byte—healthy or hostile—from a primary database to its standby in near real-time. This blind fidelity guarantees that ransomware, corrupt data, or rogue accounts are instantly mirrored across the entire estate, turning redundancy into an attack multiplier.

The Solution: RMF (Redundancy Management Framework)

RMF provides cyber-aware redundancy by keeping redundant environments isolated and synchronizing only permitted objects through secure APIs. If one site is affected by a cyber incident, the city can shift operations to a known-clean system without spreading the compromise.

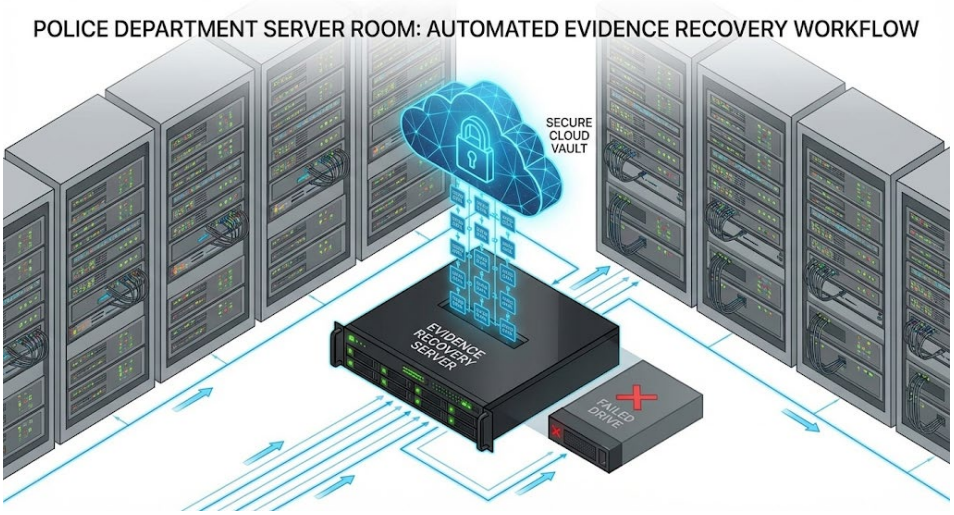
Key Capabilities

- Selective Object Synchronization: Validate, log, transform, or block changes before they cross boundaries
- Datacenter Isolation: No shared authentication, storage, or real-time database replication
- Active-Active Architecture: Both data centers are fully operational 24/7
- Client-Side Intelligence: Near-instantaneous live video recovery from alternate data centers
- Multi-Architecture Support: Clustered, Federated, or independent deployments

Business Impact

RMF dramatically reduces trust surfaces and prevents lateral movement between sites. Cities can maintain continuous operations even during active cyber incidents, with the ability to fail over to clean systems in seconds.

Use Case 4: Backup & Recovery (Hardware Failure)



The Challenge

"A recorder failed, or a disk died, and we lost the footage we needed for a critical incident."

Evidence cannot depend on a single recorder or a single disk. Hardware failures are inevitable, and when they occur during or shortly after a critical incident, the resulting loss of footage can compromise investigations and prosecutions.

The Solution: Nidhi

Nidhi protects against recorder and disk failures by maintaining a recoverable copy of critical video in a secondary storage location (cloud or on premises). When hardware fails, Nidhi enables restoration, preventing investigations from being blocked by missing footage.

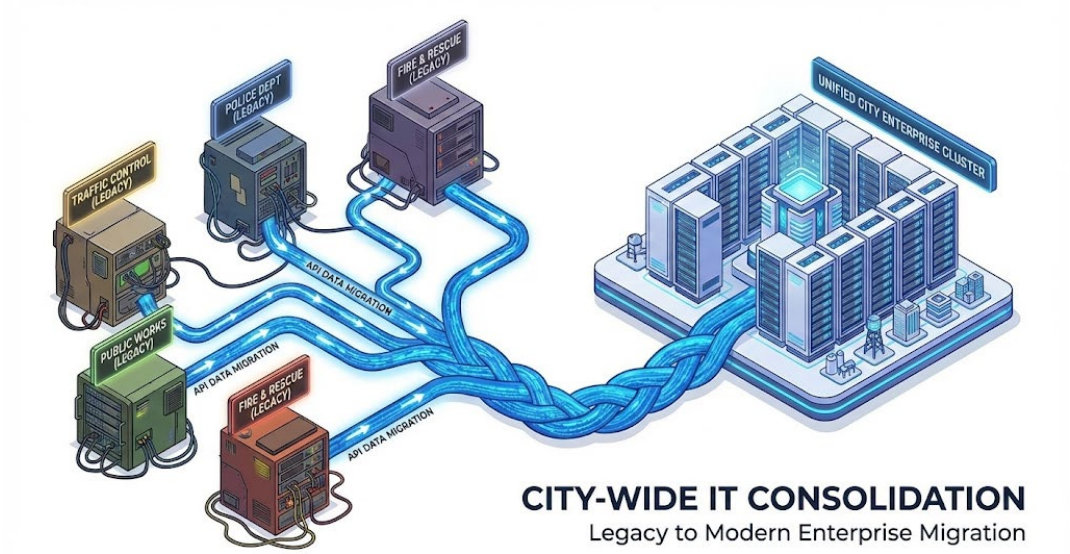
Key Capabilities

- Automated Mirroring: Real-time backup to Cloud or SMB vault
- Single Volume Recovery: Swap failed drives and rebuild missing video from the vault
- Total Hardware Resurrection: Restore entire recorder configuration after motherboard failure
- Bandwidth Scheduling: Throttle during business hours, accelerate overnight
- Native XProtect Integration: Manage backups from the Management Client

Business Impact

Cities gain confidence that critical evidence is protected regardless of hardware failures. The visual dashboard provides real-time health checks of the entire video estate, proving compliance with a single screenshot.

Use Case 5: Agency Consolidation



The Challenge

"We are merging the Traffic Department's cameras with the Police Department's system. It's a logistical mess."

Municipalities often need to consolidate video systems across multiple agencies. Traditional migration processes demand expertise in both video security administration and IT infrastructure management, leading to costly and time-consuming manual efforts.

The Solution: XPort

XPort automates bulk migration of cameras and configurations from legacy servers into the city's standardized infrastructure—reducing manual reprogramming and accelerating the timeline to a unified city-wide view.

Key Capabilities

- Many-to-One Migration: Merge multiple siloed deployments into unified system
- Fine-Grained Control: Choose specific devices, roles, views, or migrate everything
- Universal XProtect Compatibility: Works with every flavor and version
- Device Redistribution: Consolidate or distribute recorders as needed
- Cost Reduction: Up to 60% savings compared to manual migration

Business Impact

XPort simplifies the previously manual and challenging process of consolidating multiple XProtect deployments, enabling seamless content merging from multiple databases—a task impossible with traditional brute-force database backup and restore methods.

Contact Us

Ready to protect your city's video infrastructure? Contact Vega Systems to discuss your specific requirements and schedule a demonstration.

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