VEGA SYSTEMS

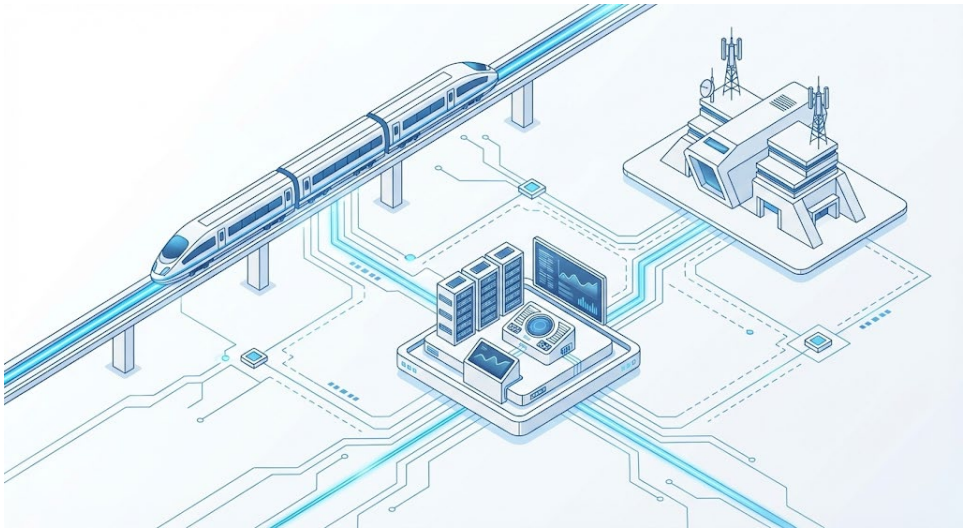
VERTICAL SOLUTIONS

Surface Transportation

Use Case Documentation

Intelligent Transport Systems

From rolling stock to the central command rail, ensuring visibility across hundreds of miles of distributed infrastructure.



Transportation Network Infrastructure Overview

The Immune System for Video Infrastructure

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The Distance Deficit

Transport networks are vast. A central command center might be 500 miles away from the station incident they are managing. This distance creates latency, bandwidth bottlenecks, and management nightmares.

Vega Systems provides architecture to bridge the gap between the edge station and the central HQ. Our suite of products ensures uninterrupted visibility across your entire network, from rolling stock to remote stations to the central command rail.

On-Board Rolling Stock

Powered by Atlas

The Challenge

> *"We have cameras on the train, but the feed cuts out when we switch between cell towers."*

Moving trains is the ultimate connectivity challenge. Video streams from on-board cameras must traverse unpredictable cellular networks, switching between towers as the train moves through different coverage zones. Traditional streaming solutions struggle with the constant jitter, packet loss, and handover gaps that plague mobile surveillance.

The Solution

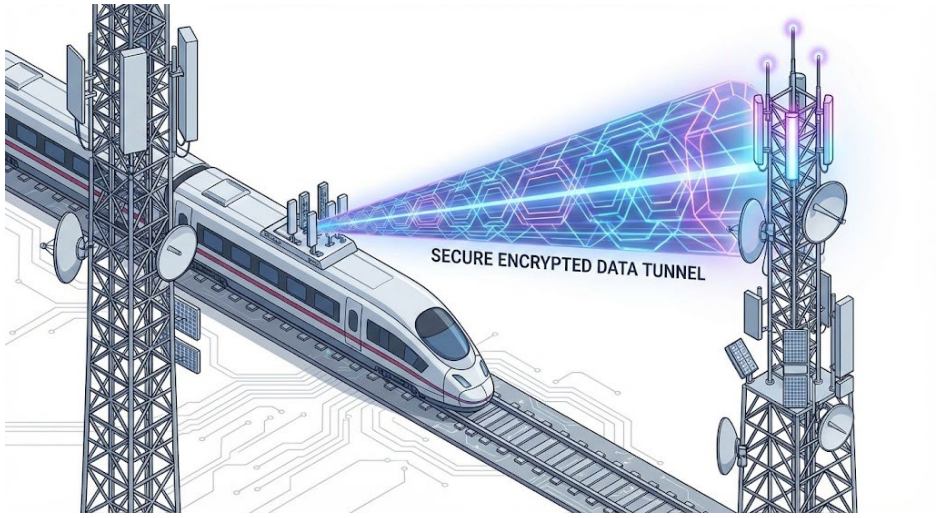
Atlas runs on your on-board cellular routers, optimizing the video stream as the train moves through different coverage zones. It actively manages the connection to ensure that critical passenger distress video reaches the Command Center live, without the jitter and freezing typical of mobile surveillance.

Key Benefits

Adaptive Stream Switching: Atlas detects jitter and packet loss in real time, dynamically adjusting the stream profile to ensure smooth video even in low-bandwidth conditions.

Outbound-Only Architecture: Zero open ports or public IP addresses required, protecting your fleet from network scanners and cyber threats.

Universal VMS Translation: Delivers standard ONVIF output directly to Milestone, Genetec, or any VMS you already own.



Atlas On-Board Deployment Architecture

Control Room Cyber Resilience

Powered by SureStream

The Challenge

> *"Ransomware hit our VMS machines, and the clients could not stream from them. The control room went dark."*

Cyber-attacks on critical infrastructure are increasing. When ransomware or malware takes down your VMS servers, traditional architectures leave operators blind at the worst possible moment. The dependency on Recording Servers and SQL databases creates a single point of failure that attackers can exploit.

The Solution

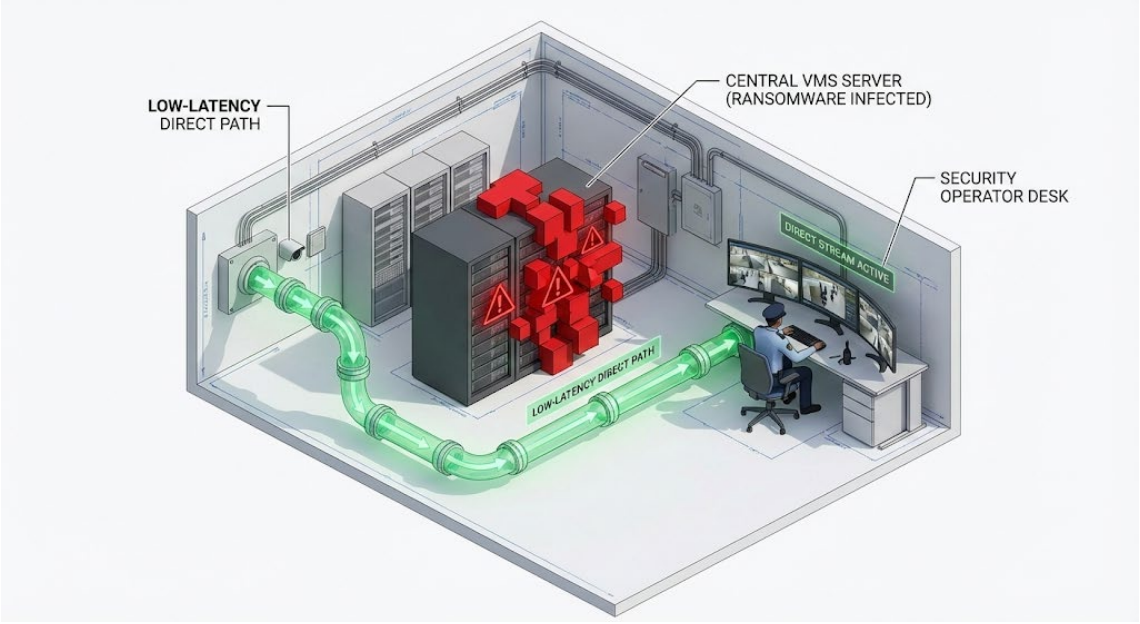
SureStream creates a direct, resilient path between cameras and clients. When servers fail, operators switch to preconfigured SureStream views and immediately resume live video streamed directly from platform cameras via ONVIF, bypassing the infected VMS servers.

Key Benefits

Always-On Visibility: Maintain operational eyes-on-glass even when servers go dark. Whether it is a routine patch or a catastrophic failure, live streams never stop.

Native Integration: Operates 100% inside the Milestone XProtect Smart Client. No external appliances to rack, no new apps for guards to learn.

Redundancy Without Servers: Achieve enterprise-grade resilience without doubling your hardware footprint.



SureStream Direct Camera-to-Client Architecture

Distributed Station Management

Powered by RMF

The Challenge

> *"We have 50 stations. If the network to HQ goes down, the local station security goes blind."*

Transportation networks span vast geographic areas but must be managed as a single, unified video security system. When the network link between a station and headquarters fails, local security personnel lose access to critical camera feeds, creating dangerous blind spots during the outage.

The Solution

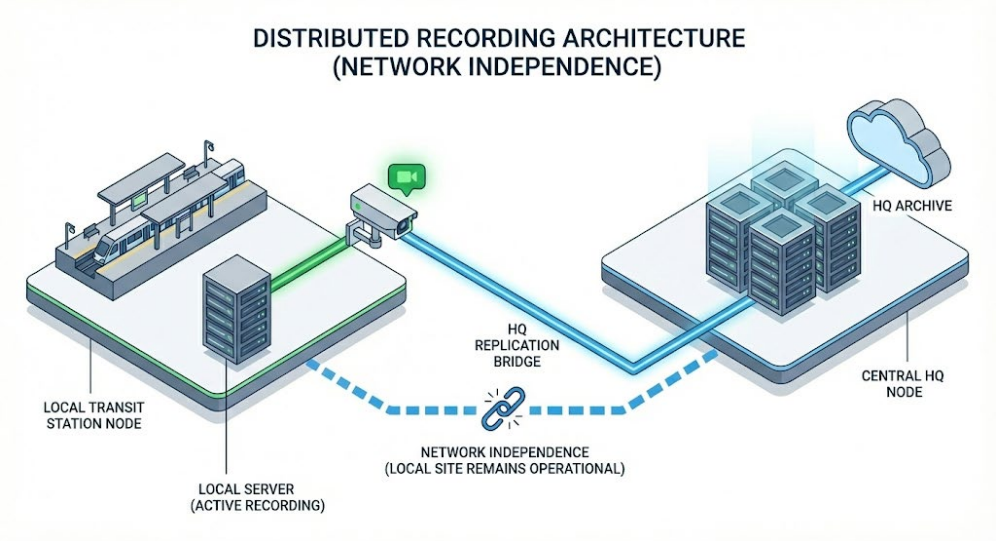
The Redundancy Management Framework (RMF) enables a Distributed Recording architecture. It allows you to record locally at each station for high quality and local reliability, while simultaneously managing everything from HQ. If the network link fails, the station keeps recording and operating autonomously. Once the link is restored, RMF re-syncs the data, ensuring no gaps in the central archive.

Key Benefits

Active-Active Redundancy: Both data centers are fully operational and accessible 24/7. All videos reside in each data center.

Cybersecure Object Synchronization: Unlike traditional replication that copies everything, including malware, RMF validates each change through the API before synchronizing.

Client-Side Intelligence: Near-instantaneous live video recovery from alternate data centers when failures occur.



RMF Distributed Architecture Diagram

Station Recorder Crash Recovery

Powered by Nidhi

The Challenge

> *"The recording server at our busiest station crashed. When IT replaced the hardware, we lost 3 weeks of footage."*

Hardware failure is inevitable. When a recording server fails at a critical station, the typical recovery process involves replacing the hardware and starting fresh, resulting in the loss of all locally stored historical footage. For transit systems with strict evidence retention requirements, this data loss can have serious legal and compliance implications.

The Solution

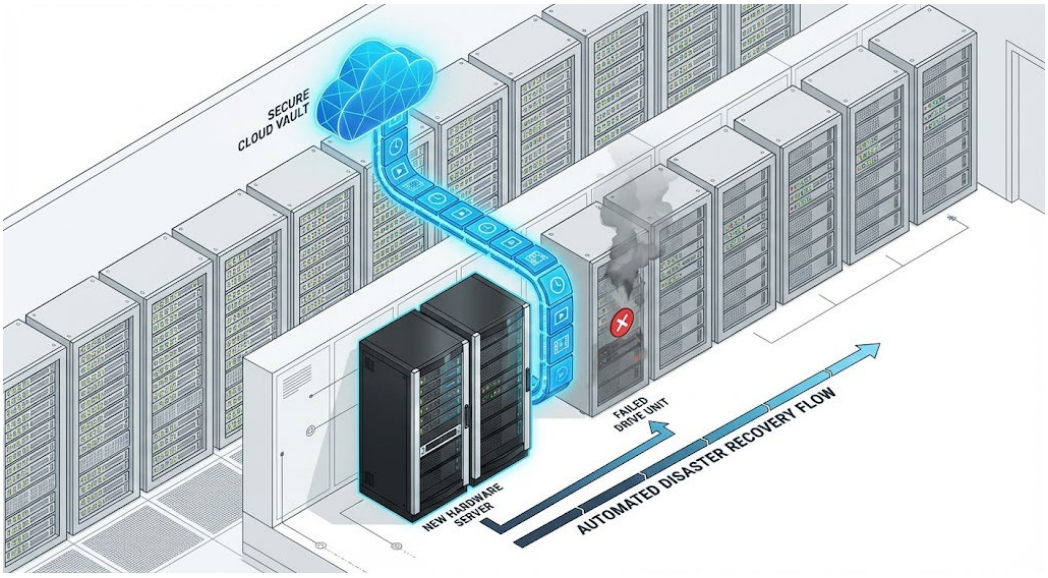
Nidhi continuously mirrors video from each station recording server to a secure Cloud or SMB vault. After the server crashed, IT replaced the hardware and ran the Nidhi Recorder Restoration workflow. The entire media database, including 3 weeks of footage, was pulled back from the vault and restored to the new server. The timeline was healed as if the crash never happened.

Key Benefits

Automated Backup: Runs silently in the background, mirroring footage to a secure vault with configurable bandwidth scheduling.

Single Volume Recovery: When a local drive fails, insert a new volume and launch the Restore Wizard to retrieve missing footage from the vault.

Total Hardware Resurrection: Restore entire server configurations and video history after complete hardware loss.



Nidhi Backup and Recovery Workflow

Consolidating Acquired Transit Systems

Powered by XPort

The Challenge

> *"We acquired a regional bus authority with 12 separate XProtect deployments. Merging them manually would take 6 months."*

Transit authorities frequently acquire smaller operators or merge regional systems. Each legacy system typically runs its own siloed XProtect deployment with unique users, roles, device configurations, and views. Manually consolidating these deployments requires significant expertise in both video security administration and IT infrastructure management, often taking months of painstaking work.

The Solution

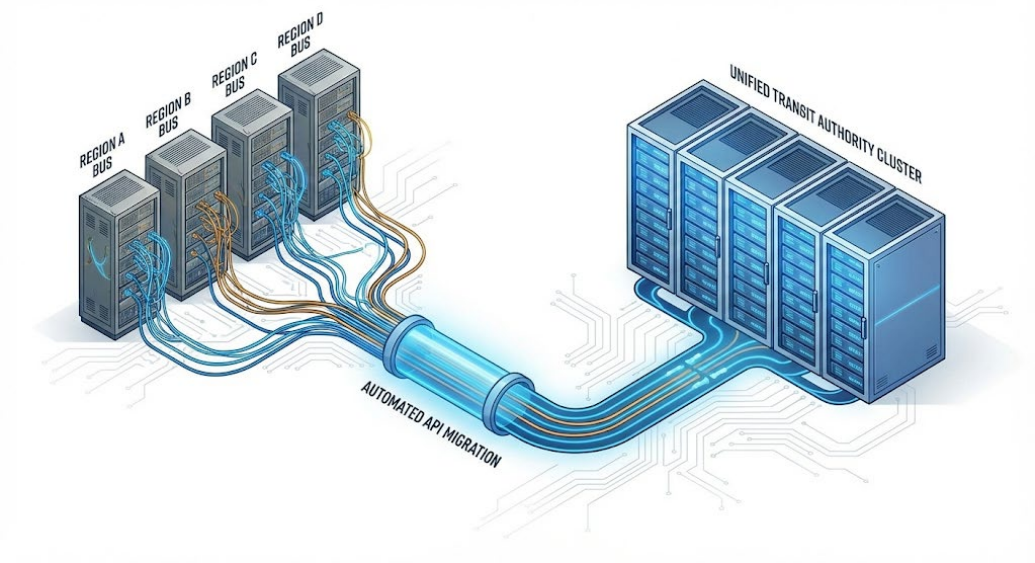
XPort automates many-to-one consolidation, migrating users, roles, device configurations, and views from all legacy systems into your unified deployment in days, not months. Recording servers from the original sites can be retained with all footage intact. One maintenance window. One cutover. One unified transit network.

Key Benefits

Many-to-One Migration: Merge multiple siloed XProtect deployments into a single, unified system while preserving all configurations.

Fine-Grained Control: Choose to migrate specific devices, roles, features, or migrate everything. PTZ presets, privacy masking, and views can be selectively included.

Cost Reduction: Automates migration workflows that previously required expensive manual effort, reducing costs by up to 60%.



XPort Many-to-One Migration Workflow

The Vega Suite: Purpose-Built for Transport

Five products. One mission: uninterrupted visibility across your entire network.

Product	Description
Atlas	Cellular-optimized video transport for rolling stock. Secure tunnel architecture with adaptive stream switching.
SureStream	Direct camera-to-client streaming when servers fail. Maintains visibility during cyber-attacks and outages.
RMF	Active-active redundancy with cybersecure object synchronization. Distributed recording with central management.
Nidhi	Automated backup and disaster recovery for video. Mirror footage to Cloud or SMB with full restoration capabilities.
XPort	Automated VMS migration and consolidation. Merge multiple deployments with fine-grained control.

Contact Us

Ready to transform your transportation network with uninterrupted video visibility? Our team of experts is ready to help you design and deploy the right solution for your needs.

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