USE CASE DOCUMENT

AIRPORTS

Mission-Critical Aviation Video Infrastructure

From the perimeter fence to the biometric gate, Vega Systems ensures every camera stays live, recorded, and compliant.

Executive Summary

At airports, public safety demands the deployment of high-availability video surveillance solutions. Any loss of situational awareness poses a risk to public safety and is unacceptable.

Airports are not a single facility but rather a collection of high-security zones, each with unique connectivity, retention, and compliance requirements. A generic failover solution does not address the needs of a remote baggage scanner or a pop-up check-in kiosk.

This document outlines how Vega Systems addresses each distinct airport environment with purpose-built solutions.

PRODUCT PORTFOLIO

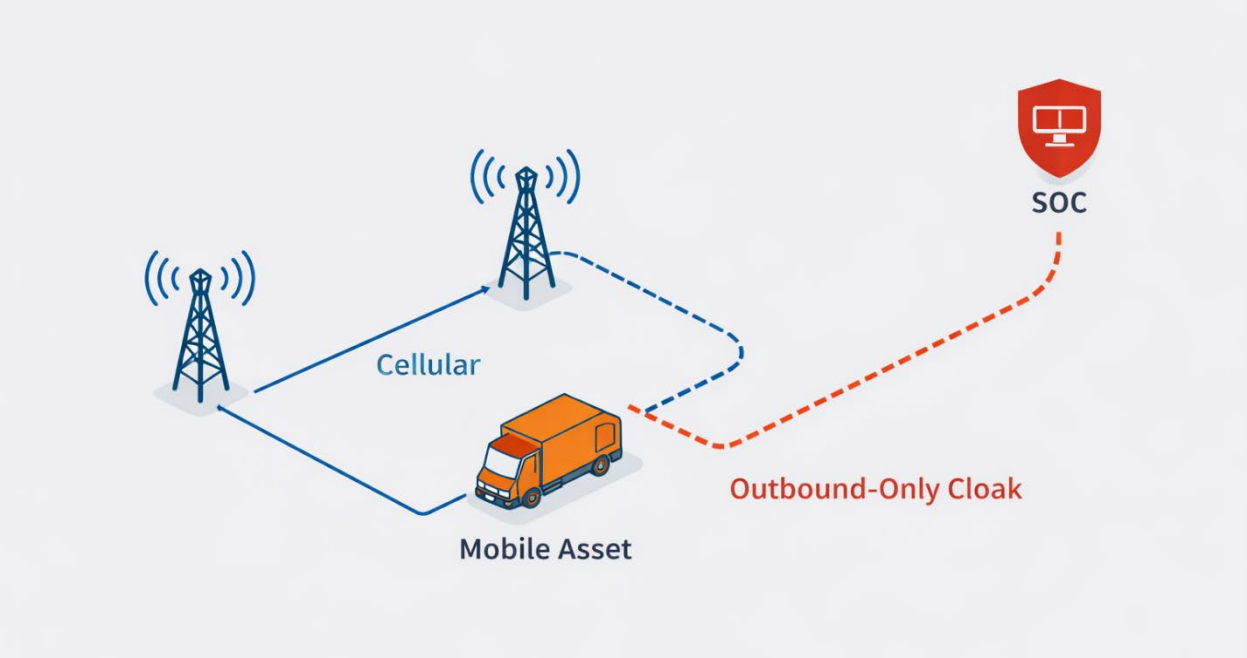
Product	Description
Atlas	Secure video transport over wireless/cellular networks for mobile assets
SureStream	Direct camera-to-client failover path for mission-critical cameras
RMF	Cybersecure redundancy with isolated data centers and selective sync
Nidhi	Automated video backup with timeline restoration for compliance zones
XPort	Automated migration engine for infrastructure upgrades and consolidation

USE CASE

Powered by Atlas

Tarmac Patrols & Mobile Assets

Reliable video from vehicles in motion



THE CHALLENGE

Security patrol cars lose video feed every time they drive behind a hangar or switch Wi-Fi access points. Perimeter patrol vehicles, fuel trucks, and Follow-Me cars experience video freezes and dropped connections due to Wi-Fi roaming issues. Traditional solutions cannot maintain stable streams from assets in constant motion across large airfield areas.

THE SOLUTION

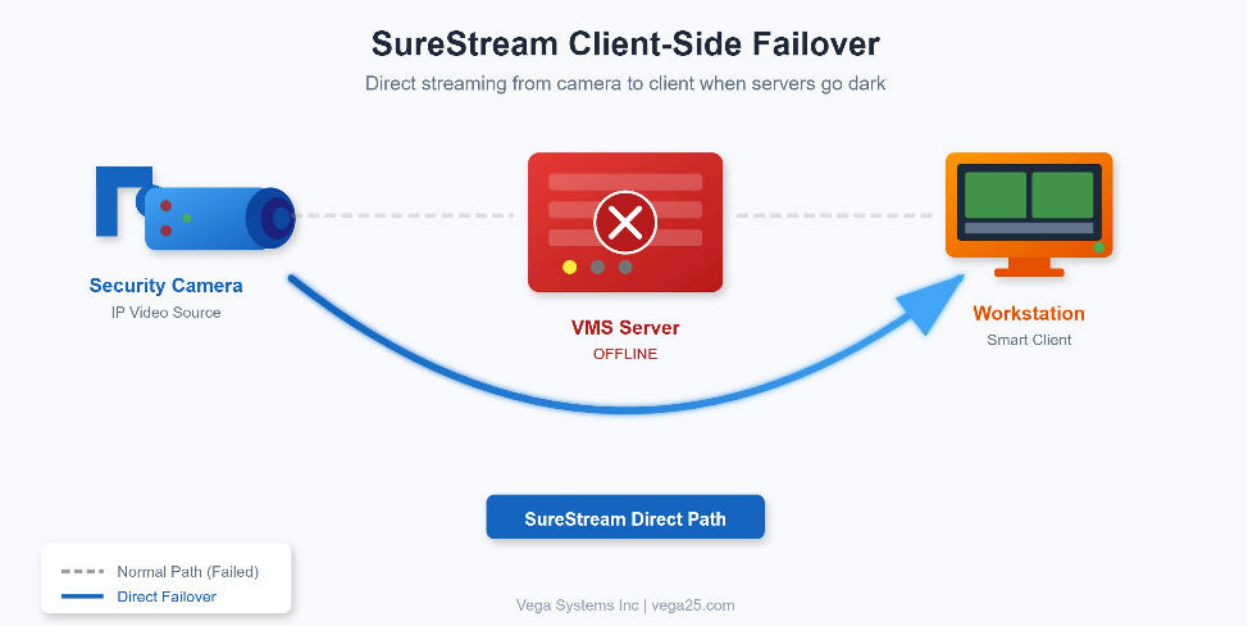
Atlas provides a seamless, cellular bridge for mobile assets. It bypasses Wi-Fi roaming problems by utilizing cellular connectivity with adaptive stream switching that detects jitter and packet loss in real-time. The Outbound-Only Cloak architecture creates secure tunnels without exposing IP addresses or requiring open ports. Whether monitoring a perimeter patrol vehicle, fuel truck, or Follow-Me car, Atlas ensures live, jitter-free video transmission from the tarmac back to the SOC regardless of vehicle speed or location.

USE CASE

Powered by SureStream

Mission-Critical Zones

Zero-downtime visibility for essential cameras



THE CHALLENGE

Large airports may have thousands of cameras, but certain cameras simply cannot fail. Control tower cameras provide visual confirmation of runway status. TSA checkpoint cameras enable continuous manual monitoring of queues. Customs and border cameras provide uninterrupted live visual verification of travelers. Standard VMS architecture creates a single point of failure where server outages cause immediate loss of live feeds.

THE SOLUTION

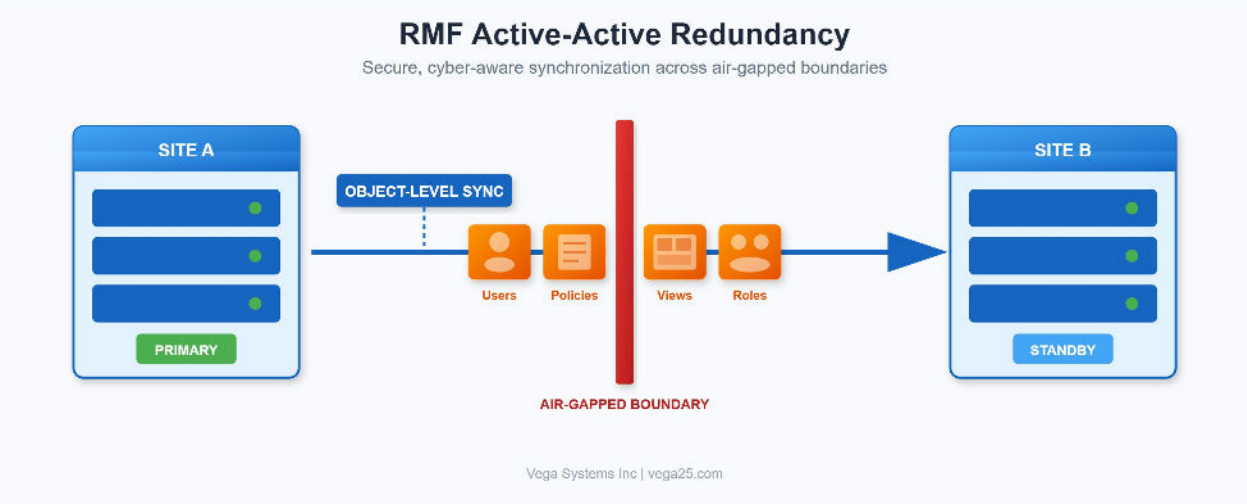
SureStream creates a parallel, failover playback path directly from the camera to the operator. Instead of relying on the VMS server to relay video (the hairpin architecture), SureStream establishes a direct connection. Even if the Recording Server, SQL, or Management Server fails, the Smart Client keeps streaming directly from the camera. This native XProtect integration operates 100% inside the Milestone Smart Client with no external appliances to rack, no new applications for guards to learn, and no disruption to existing workflows.

USE CASE

Powered by RMF

High-Compliance Zones

TSA, BHS, and Sterile Area protection



THE CHALLENGE

During an incident or claim, there can be no uncertainty about what was captured, where it resides, or whether a compromised system contaminated the backup. Traditional high-availability architectures replicate everything, including mistakes and malware. A ransomware attack or database corruption on one server instantly propagates to the standby system, leaving no clean recovery point.

THE SOLUTION

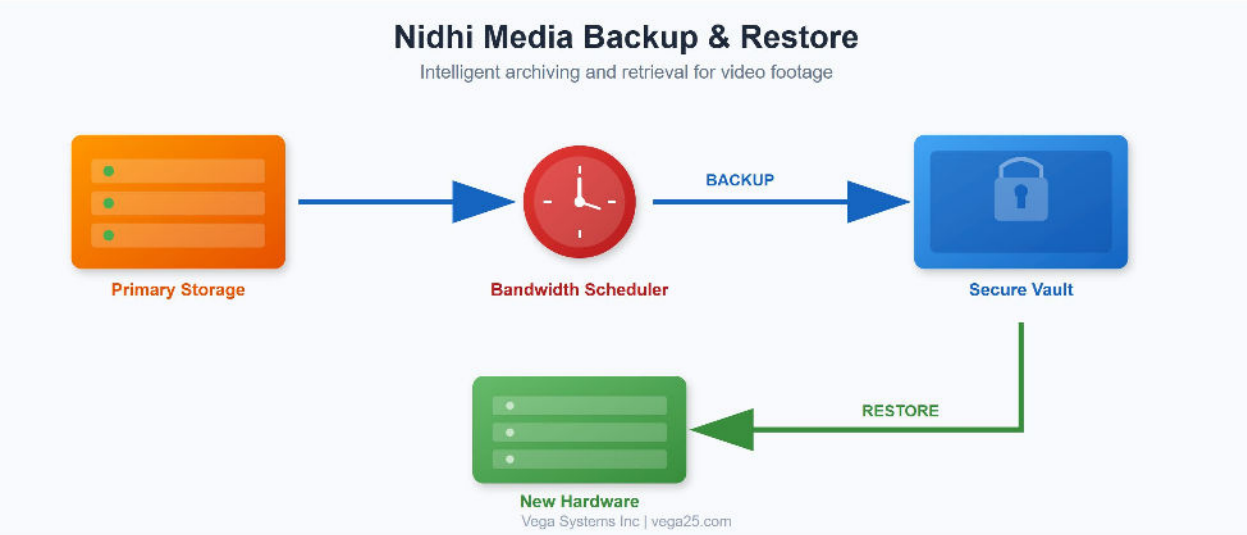
RMF introduces cyber-aware redundancy through the Gemini Architecture: two completely independent systems acting as one. Unlike traditional SQL clustering that replicates every byte (healthy or hostile), RMF uses selective object-level synchronization through Milestone APIs. Each user, policy, or device is treated as a discrete payload that can be validated, logged, or blocked before crossing air-gapped boundaries. If one site is impacted by failure or cyber incident, operations shift to a known-clean system without spreading compromised state. There is no shared authentication, storage, or real-time database replication between sites.

USE CASE

Powered by Nidhi

Customs & Immigration

Federal compliance and evidence retention



THE CHALLENGE

Federal zones have strict retention mandates. A disk failure resulting in lost footage creates a compliance violation with federal law. Interview rooms and checkpoint cameras must maintain complete video records for specified retention periods.

THE SOLUTION

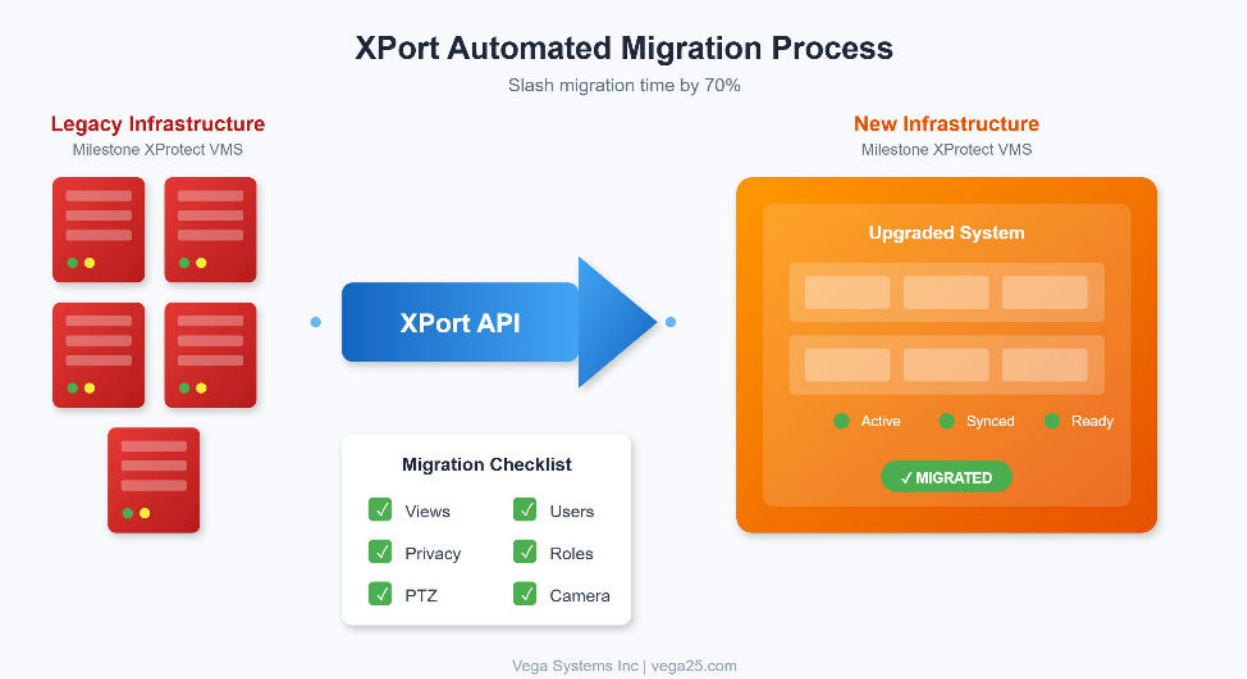
Nidhi acts as a safety vault, mirroring critical interview room and checkpoint footage to a secure secondary location (cloud or on-premises storage). The Bandwidth Scheduler throttles backup speeds during business hours to protect network performance, then opens the floodgates overnight for full-speed replication. When a local volume fails, the Restore Wizard pulls missing footage from the vault back onto new drives. If an entire recorder motherboard fails, the Recorder Restoration workflow restores complete configuration and video history to a new server as if the crash never happened.

USE CASE

Powered by XPort

Terminal Expansion Projects

Simplified infrastructure migration



THE CHALLENGE

Airports are always under construction. Terminal renovations may require moving hundreds of cameras to new server infrastructure. Traditional migration methods require weeks of manual work including database restoration, XML configuration file editing, and individual camera reprogramming. This demands expertise in both video security administration and IT infrastructure management.

THE SOLUTION

XPort automates the migration process with an API-based approach that offers precise control over migration content. System integrators can bulk-move hundreds of cameras from old hardware to new infrastructure while preserving historical footage and configurations. XPort supports one-to-one migrations between hardware platforms, many-to-one consolidation of siloed deployments, and one-to-many site splitting scenarios. Users can choose to migrate specific devices, roles, views, privacy masking, PTZ presets, or complete configurations. Migration costs are reduced by up to 60% compared to manual methods.

Customer Testimonials

> *"Utilizing Vega Systems RMF enabled us to deliver the video recovery required, impose a smaller footprint, and provide a better value to the airfield. Vega Systems was responsive, knowledgeable, and extremely helpful."*
>
> **Ben Blackerby**
> VP, Logical Solutions Inc (Dallas)

> *"Their professionalism, dedication, and flexibility to adapt to our client's needs have been instrumental. We look forward to our continued collaboration."*
>
> **Konstantinos Kondylis**
> Lead Engineer, LYSYS Technologies (Doha)

Contact Us

The path to high availability can be complex. Share your architecture objectives with our solution engineers, and we will help you design a redundancy strategy that meets your failure tolerance and budget requirements.

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The Immune System for Video Infrastructure

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Document Version 2026.02