WOWZA

WOWZA VIDEO INTELLIGENCE FRAMEWORK

AI-Powered Analysis for Live Video Streams

Wowza Video Intelligence Framework (VIF) enables AI-powered analysis of streaming media by extracting video frames, routing them to external AI models for inference, and converting the results into real-time outputs such as metadata, overlays, event logs, and alerts. Organizations can treat video streams as a programmable source of operational data — not a passive media feed.

Turning live video into operational intelligence — across transportation, defense, public safety, and more.

PRACTICAL APPLICATIONS & USE CASES

Department of Transportation

Camera health monitoring, wrong-way driver detection, stalled vehicle detection, infrastructure security.

Defense & Aerospace

Perimeter intrusion detection, weapons detection, crowd/mass gathering analysis, range safety surveillance.

Law Enforcement

Drone feed monitoring, inter-agency surveillance sharing, corrections facility oversight, SWAT operational support.

Industrial & Infrastructure

Equipment monitoring, zone-based anomaly detection, post-incident event logging.

Live Events & Venues

Stadium and venue security monitoring, crowd density analysis, perimeter access control, incident detection during large-scale events.

Critical Facilities

Access control monitoring, restricted area detection, camera health across distributed sites.

WHY ORGANIZATIONS CHOOSE WOWZA VIDEO INTELLIGENCE FRAMEWORK

1. **No Infrastructure Rebuild Required**
   Wowza VIF connects to existing Wowza Streaming Engine deployments. There is no need to replace your video infrastructure to add AI capabilities.

2. **Model Flexibility**
   Bring your own pre-trained models. Wowza VIF is designed to support a wide range of computer vision models including custom object detection (RF-DETR).

3. **Real-Time Operational Signals**
   Convert AI detections into structured outputs: metadata, bounding boxes, thumbnails, event clips, confidence scores, and webhook alerts.

4. **Independent Scaling**
   AI inference runs in a separate service so compute-intensive workloads never impact the reliability of your video delivery pipeline.

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TECHNICAL OVERVIEW

HOW WOWZA VIDEO INTELLIGENCE FRAMEWORK WORKS

Frame Extraction

Frames sampled at configurable intervals. No interruption to video delivery.

AI Model Inference

Frames routed to external AI models — RF-DETR or your own pre-trained model.

Signal Generation

Structured outputs: detected object, timestamp, bounding box, confidence score.

Event Output

Thumbnails, event clips, webhook alerts, and logs sent to operational systems.

WHAT WOWZA VIDEO INTELLIGENCE FRAMEWORK ENABLES

Object Detection

RF-DETR transformer-based models that identify people, vehicles, or equipment within frames. Returns bounding boxes, confidence scores, and timestamps.

Model Flexibility

Integrate your own pre-trained computer vision models. Once integrated, your model runs against live streams and produces the same structured outputs and event signals used across the platform.

DEPLOYMENT & RUNTIME ARCHITECTURE

Inference Service

Python-based service receives extracted frames, routes to AI models, processes outputs. PyTorch model runtime with optional NVIDIA TensorRT acceleration for GPU deployments.

Containerized Deployment

Delivered as containerized services, deployed via Docker. Typical stack: Wowza Streaming Engine + Wowza Streaming Engine Manager + Wowza Video Intelligence Framework.

Independent Scaling

AI inference scales separately from streaming. Add GPUs or inference workers as needed. Supports small deployments and large camera fleets without impacting streaming stability.

KEY CAPABILITIES

Feature	Detail
Frame Extraction	Configurable sampling intervals from live streams; no impact on the video delivery pipeline
AI Model Integration	Routes extracted frames to external models for inference; manages frame delivery, orchestration, and result handling
Model Support	Flexibility to integrate your own pre-trained models, native support for RF-DETR models
Event Signal Output	Structured metadata, thumbnails, short video clips, and webhook payloads generated from inference results
On-Premises Inference	Fully air-gapped operation supported; no cloud connectivity required during inference
Operational Integration	Webhooks, SIEM tools, incident management platforms, and traffic management systems
GPU Acceleration	Optional NVIDIA TensorRT acceleration; requires SM 7.5+ (Turing architecture or newer)

WOWZA VIDEO INTELLIGENCE FRAMEWORK IN ACTION

Live video stream processed in real time, with detections converted into structured events, alerts, and logs that teams can act on immediately.