MAVENIR

SOLUTION BRIEF

INTELLIGENT VIDEO ANALYTICS (IVA)

Mavenir's Intelligent Video Analytics (IVA) delivers an intuitive yet powerful solution where artificial intelligence (AI) is applied to real-time videos to analyze and generate alerts for actionable insights. The comprehensive solution is built on cloud-native frameworks, enables 5G networks, and leverages acceleration offered by GPUs to deliver highly reliable, high-performing, and scalable AI solutions at the edge.

Enterprises are utilizing cameras to capture images and videos at an accelerated pace to understand and react to anomalies. With several petabytes of data being accumulated every day, enterprises seek AI-based solutions to complement human staff responsible for detecting and reacting to insights.

The solution is unique in the marketplace where a comprehensive solution with bundled deep learning models and configured workflows detects and acts on insights at the edge.

Drive faster decisions with a comprehensive solution

Consciously designed to deliver a solution that would ensure quick time to value and return on investments, the core capabilities and value to enterprises include:

Built for business users – Tailored for business users, including traffic inspectors at cities, floor supervisors on manufacturing plants, security officers at stadiums, and even facility managers at airports. The intuitive point and click user interface minimizes time required to configure videos from wireless cameras with pre-configured workflows and models to start analyzing insights. Business users can identify regions to limit analytics and specify directions to enforce rules on analytics.

Enables out-of-the-box models and use cases – Bundled with pre-trained models to detect vehicles, people, personal protective equipment (PPE), face masks, and several other objects. These objects are put in context to manage crowds, monitor growing queues or detect workers in a no-go zone. Such pre-trained models with preconfigured detection chaining provide deeper insights required for efficient operations. In addition to the bundled pre-trained models, custom models can be trained and integrated into new workflows to fit the business need.

Monitors dashboards and configurable alerts – Detected insights are plotted on preconfigured dashboards for business users to understand patterns and trends. Rules can be specified to generate alerts that can be delivered as emails or text messages on phones, or as MQTT events on message servers.

Integrates with other systems of engagement – Message brokers are used to orchestrate communication of detected insights with Production Line Controllers (PLC) on typical manufacturing floors. Message brokers are based off MQTT protocols where events can be published, and clients can subscribe to receive and react upon them.

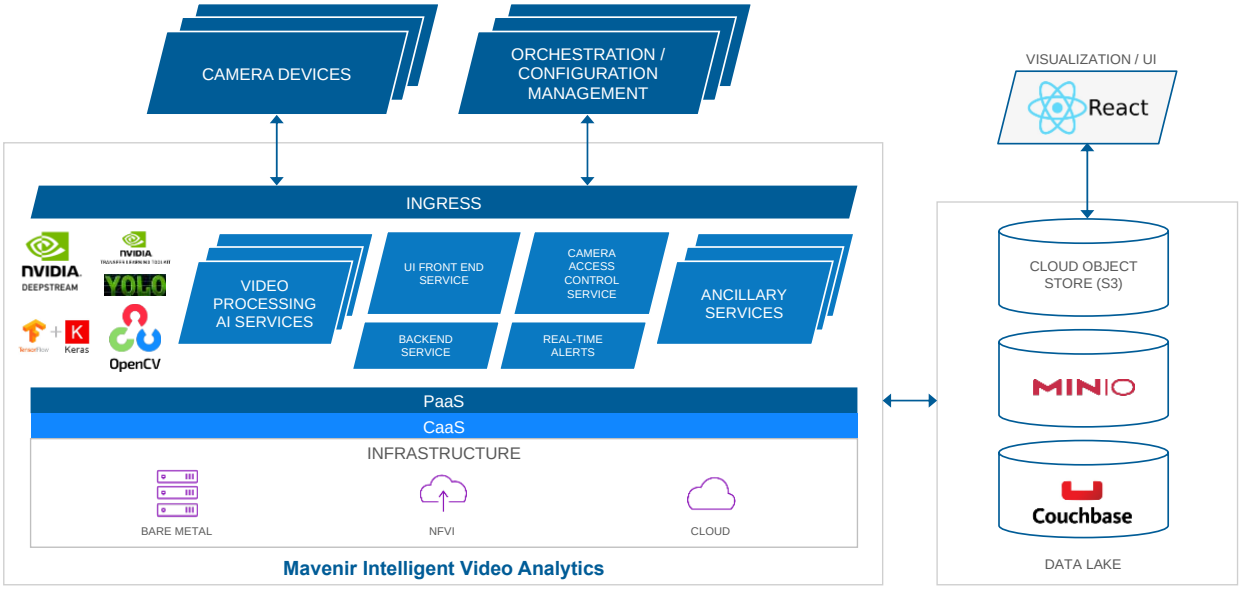

Figure 1: Mavenir's Intelligent Video Analytics (IVA) High-level Architecture

Deploys on the cloud and the edge – Built on a cloud-native framework, the solution can be deployed on the cloud where insights from the edge nodes are aggregated for cumulative analysis. A lightweight software is designed for a variety of Edge hardware to analyze videos and images to upload the metadata and relevant footage of value. As described in Figure 1, features of the application are delivered as containerized micro services, that expands to scale, performs linearly to the analyzed volumes, and ensures high availability of services.

Accelerate solutions for various domains

IVA is bundled with several pretrained models that can accelerate deployments of AI solutions for several domains.

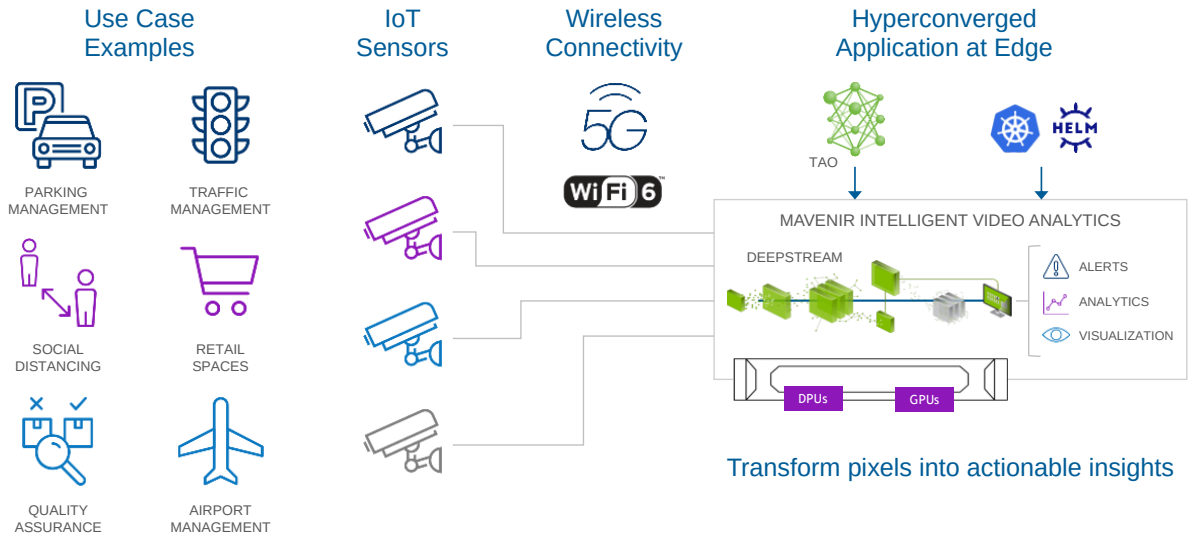

Figure 2: Mavenir's IVA deployment architecture

As depicted in Figure 2, IVA is a platform to aggregate pixels from several cameras, have them analyzed with pre-trained models to generate event based actionable alerts.

Parking management and traffic management for Smarter Cities – The lifelines of a city are monitored to ensure smooth movement of traffic. IVA bundles inbuilt models that detect traffic jams and accidents and compute average speed of vehicles on a highway. Intersections are monitored for "near-miss" incidents, parking spots are checked to manage parking and illegal U-turns are detected to provide details for the traffic administration to react. Traffic administrators can log details such as detected license plate numbers, location and time of the incident to pursue the incident with drivers or use the information to improve management of traffic.

Social distancing to safely bring workers back post pandemic – Industries are working hard to enforce regulations that will help curb the spread of the pandemic caused by the COVID-19 virus. Intelligent video analytics is being engaged to ensure workers are following social distancing protocols by promptly detecting queues at entry and exits, ensuring contact with common areas are reduced by scanning faces to provide access to facilities, and recommending face masks to prevent the spread of the virus. In addition, IVA can also survey workplaces to ensure workers are effectively using PPE and monitoring for safety while heavy machinery is in use.

Optimize management of retail spaces – Retailers are engaging AI to enhance the shopper experience and optimize the orchestration of inventory in their premises. Insights such as footfall help retailers ensure their floors are well staffed and inventories are filled up. Shoppers are analyzed to profile their buying habits and instantly provide the best deals. AI is leveraged to monitor shelves for inventory, shopping floors are surveyed for abandoned carts, or products on the floor or detect slippery floors that could cause injuries, cameras outside the retail store can also detect people loitering or vandalizing their facilities.

Quality assurance to ensure zero defects during manufacturing – Computer vision complements workers on manufacturing floors to inspect for defects and ensure high quality products. Images and videos from fast moving production lines are analyzed for anomalies, and actionable alerts are generated for the PLC to react. For example, a can of soda with a deformed label would be removed from the line, preventing its further processing into the packaging of finished goods. Intelligent video analytics over 5G can process several hundreds of fast-moving products to optimize production to ensure the highest quality of products. The bandwidth of 5G offers scaling solution to several use cases with least impact to the existing infrastructure.

Manage airports to enhance traveller experiences and monitor assets – Airports are facilities that never sleep. Passengers expect smooth flow of operations for a quality travel experience. Likewise, operators expect operations and assets to be optimally managed. IVA provides custom build AI capabilities where every stage of a passenger journey can be monitored to improve the experience. Parking lots are monitored to ensure passengers can enter and exit very quickly, and long lines at check-ins and security gates are detected to summon additional help. Premises are surveyed for crowding or loitering of passengers. In addition, assets such as aircrafts are monitored to measure the insights that help operators optimize shared facilities, including average time to fuel, load/unload baggage, and connect jet bridges to onboard/off-board passengers.

Why Mavenir for Intelligent Video Analytics

The ease-of-use tooling of IVA from Mavenir lowers the cost of ownership and accelerates AI journeys for enterprises. Designed for domain experts, our self-intuitive user interface can quickly configure cameras against pre-orchestrated workflows that glean instant insights, eliminating dependencies on data scientists.

Prebuilt models and preconfigured workflows with AI-infused analytics reduces time to deploy and accelerates time to value. The IVA solution is designed to leverage hardware with GPUs and 5G networks, providing exponential experiences in performance across workloads and broadband to scale several use cases.

Built on a cloud-native framework, the solution can be deployed on several cloud infrastructures. An open architecture has been adopted to integrate with sub systems from multiple vendors typically engaged for implementing actions on the derived insights. Mavenir is a unique vendor capable of delivering comprehensive AI solutions for 5G private networks, eliminating dependencies of several vendors resulting in optimized deployments and maintenance.

Learn more about Mavenir's Intelligent Video Analytics at www.mavenir.com/iva

About Mavenir

Mavenir is building the future of networks and pioneering advanced technology, focusing on the vision of a single, software-based automated network that runs on any cloud. As the industry's only end-to-end, cloud-native network software provider, Mavenir is transforming the way the world connects, accelerating software network transformation for 250+ Communications Service Providers in over 120 countries, which serve more than 50% of the world's subscribers.

For more on Mavenir Solutions please visit www.mavenir.com