TimeWatch Artificial Intelligence (AI) based Video Analytics Software

Model / Part No: TWVAS1.0

TimeWatch AI Video Analytics Software (TWVAS1.0) is an Artificial Intelligence and Deep Learning powered video analytics platform. The offered solution delivers automated Number Plate Recognition (ANPR) and intelligent Camera Health Monitoring, backed by a unified web-based management interface for deployment, monitoring, configuration and event retrieval across a network of cameras.

Basic Information

Domain	Artificial Intelligence (AI) / Machine Learning based Video Analytics Software
Modules / Components Offered	1. AI-Based Vehicle Number Plate Recognition (ANPR) System 2. AI-Based Camera Health Monitoring
OEM Model / Part No.	TWVAS1.0
Software Description	ANPR with boom-barrier integration
Software Version	v1.0
Country of Origin	India

Licence, Support & Deployment	
Type of Licence	Perpetual
Duration of Subscription	5 Years
Valid Licence / Subscription Copy	Provided
Maximum User Handling Capability	10 users
Concurrent User Handling Capability	10 users
Hosting / Deployment Options	On-Site / Buyer's Premise • Private Cloud
Installation & Demonstration	Yes
Scope of Installation	Installation, Integration, Configuration, End-to-End Workflow Implementation, and User Acceptance Testing of offered modules
OEM Support Coverage	Unlimited updation of patches & bug fixes and unlimited upgradation of version within the support period
Support – Updation (Patches & Bug Fixes)	3 Years
Support – Version Upgradation	3 Years
Training Options	On-Site, Virtual, Training Material
Training Duration	5 Days

AI-Based Vehicle Number Plate Recognition (ANPR)

A Vehicle Number Plate Recognition application built on Artificial Intelligence and Deep Learning models for accurate detection and recognition of number plates in real time.

Recognition Accuracy	
Minimum Accuracy – Day Time	95%
Minimum Accuracy – Night Time	85%

Detection Capability

- Standardized vehicle number plates
- Non-standardized vehicle number plates
- Reflective vehicle number plates
- Number plates at night using IR illuminators

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Recognition Features

- Captures and stores the image of each detected number plate
- Looks up the detected number plate against a configured database
- Generates alerts based on the status of the number plate in the database
- Assigns labels/tags to detected vehicles (e.g., VIP, Offender)
- Derives a severity rating for a detected plate based on predefined rules

Vehicle Search Capability

Detected vehicles can be searched and filtered on the basis of:

- Vehicle colour
- Vehicle number plate
- Date & time
- Location
- Type of vehicle

AI-Based Camera Health Monitoring

An application that detects the working status of a group of cameras and identifies anomalies in camera behaviour using Artificial Intelligence and Deep Learning.

Detection Capability

- Camera view obstructed
- Bright light shone at the camera
- Change in the camera's field of view
- Illumination dropping below a defined threshold
- Loss of camera feed / connectivity

Features

- Allows the user to adjust detection sensitivity for each individual camera
- Raises alerts by category-View Obstruction, Camera View Change, Low Illumination, and more

Platform & Generic Features

Easy Deployment & Configuration

- Structured as an app deployable on any camera through a camera-app matrix, giving complete visibility of which apps are running on which cameras.

Key User-Interface Features

- Event Notifications-results are presented as events containing a screenshot plus metadata (detected objects, timestamp, camera/video). Available in both grid and list views.
- Resource Management View-lists every resource in the system (compute servers, edge devices, cameras) with live online/offline status at all times.
- AI Training Tool-annotate and label images from events to train new AI models or update existing ones; all available models can be plugged into any app easily.
- App Camera Grid-a matrix to assign, start, stop and schedule any app on any camera, with active/inactive status shown through colour-coded indicators.
- Data Analytics Dashboard-an analytics view of event patterns across cameras, including an hourly heatmap of event volume.

Web-Based Interface

- Accessible from any system on the local area network using login credentials; supports multiple simultaneous users with real-time alerts and notifications.

Live Video Interface

- View the live video stream from any camera with overlaid information on regions, objects, people and vehicles.

Camera Configuration & Management

Camera-Level Configuration

- Each camera stream can be uniquely configured with parameters for calibration, image-quality improvement and night/day settings.
- The same app can run across different cameras with different settings (e.g., distinct intrusion zones or line-crossing lines) at different hours of the day.
- A configuration page lets the user select any available AI model for object detection and classification, with each model's performance and hardware requirements clearly described.

Configuration Capacity	
Cameras Configurable by the Product	Per-camera configuration supported
Simultaneous Video-Analytics Apps per Camera	Up to 5

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Key Configuration Parameters

- Define multiple detection zones per camera-lines and regions used to mark perimeters and regions of interest.
- Adjust sensitivity and confidence parameters to tune each app's performance for the camera's physical deployment.

Event Filtering & Retrieval

- Time Filtering - retrieve all events within a defined time range using a start and end time.
- Attribute Filtering - filter and retrieve events by attributes of people, vehicles and objects, such as visible colours, direction of movement and time of stay.
- Location Filtering - filter events by physical location within a camera (by drawn regions or lines) or across a selection of cameras.

Supported File Formats

Video Formats

H.264, H.264+, H.265, MP4, MJPG, AVI, MKV, RTSP streams, FLV, WMV, OGG

Image Formats

ANI, BMP, GIF, ICO, JPEG/JPG, PCX, PNG, PNM, RAS, SVG, TGA, TIFF, WBMP, XBM, XPM

Recommended Hardware Requirements (On-Premise)

Server Configuration	Intel / AMD
CPU Required	Intel / AMD
Operating System	Linux
Storage Requirement	128 GB
Supported Web Browsers	All major browsers
Supported Database	All major databases
Performance Accelerator	GPU Cards (to enhance performance and accuracy)

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