VCAserver

Applied Intelligence

TURNKEY ANALYTICS SOFTWARE TECHNICAL SPECIFICATIONS

All-in-One, Stand-Alone Analytics Software

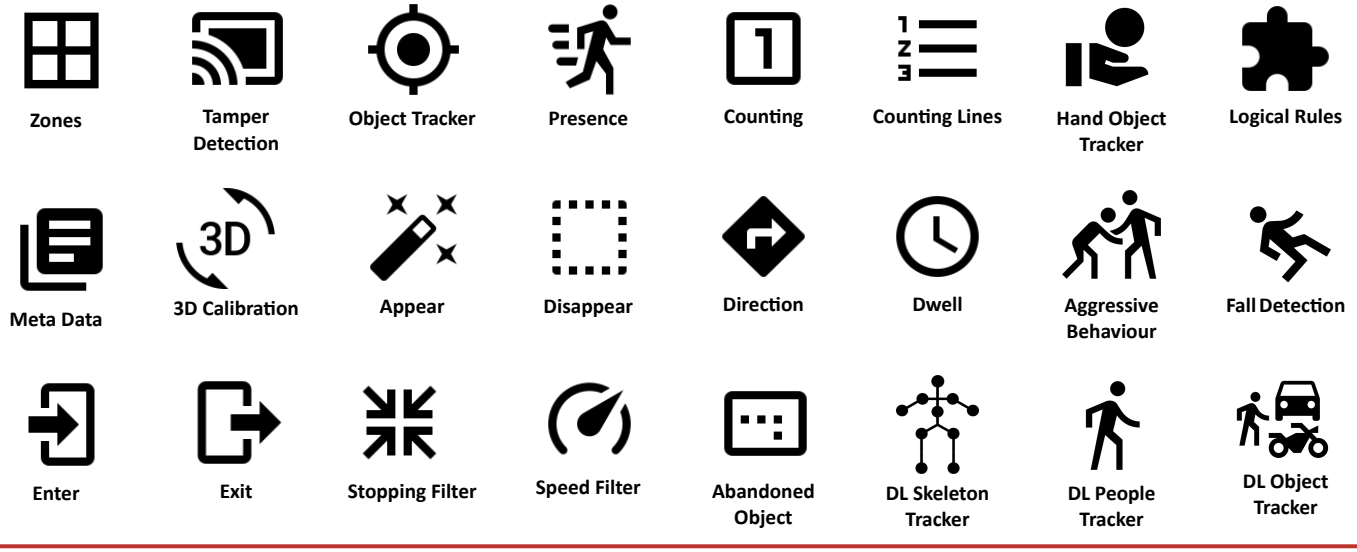
- Rapidly add analytics functionality to a system, VMS, PSIM or NVR software.
- Open and standard interfaces for rapid integration.
- Also operates as a stand-alone server-based analytics solution.
- Stream video directly from any IP camera or VMS via RTSP.
- State-of-the-art Machine Learning and AI algorithms for tracking people, vehicle types and bags.
- Full analytics metadata stream provided to facilitate forensic search or other value-added applications.
- Deployable on Intel x86 and ARM hardware.
- Customisable out-of-the-box HTML5 user interface for analytics configuration; Configure rules and review events using your web browser on any device (via Chrome on Windows, Linux, Mac, Android).
- Edge or server-based options. Embedded in a wide range of our cameras, integrated into several VMS or as a standalone service.

VCAserver is an all-in-one analytics server and reference design that enables the rapid integration of VCA Technology's AI tracking and classification technologies to 3rd party systems such as VMSs, NVRs and PSIM systems.

In standalone mode, VCAserver can stream video from a range of input sources and generate events in a range of formats.

Designed from the ground up to be easy to use and integrate. With video streaming, event alerting and an HTML5 configuration interface out-of-the-box. Simple integrations can be completed in less than a week.

ANALYTIC & AI FEATURES



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BEST-IN-CLASS ANALYTICS
Over 1,500,000 channels of VCA Technology's analytics have already been deployed on PC and embedded platforms. VCAserver can upgrade any compatible IP camera, VMS, NVR or PSIM with a best-in-class analytics solution with minimum integration effort.

WEB-BASED CONFIGURATION INTERFACE
A HTML5 web-based interface supports the configuration of detection rules and notifications on desktop and mobile devices with the option for OEM customisation and interface skinning.

EASY INTEGRATION
Easy integration with a wide range of VMS, NVR and PSIM platforms over HTTP, TCP or email. VCA Technology's simple token-based message format provides relevant metadata to your platform. Enabling real-time analytics alerts, metadata overlay and forensic search capabilities from within the native VMS environment.

ADVANCED AI ANALYTICS ENGINE
State-of-the-art deep learning classification and people tracking engines for reduced false alarms and accurate business intelligence metadata.

LOGICAL RULES
Simple to use logical rules engine, allowing the coupling of rules to create advanced behaviour detection. Create bespoke alarms and events.

OPEN STANDARD API
Fully documented, open standard, REST API and metadata streams, for simple integration into a range of customized monitoring scenarios and applications. Facilitates simple event reporting to real-time metadata streaming for forensic search.

STAND-ALONE ANALYTICS SERVER MODE
Deploy as a stand-alone analytics server, streaming video from cameras or VMSs directly, or as a reference design for deeper integrations.

SYSTEM

Supported OSs	Ubuntu 22.04 LTS, Windows 11
Supported Browsers	Chrome (version 130 and above)
Supported Clients	PC, Android, Mac
Supported Platforms	Intel / AMD x86, ARMv8
Supported Video Formats	H.264, H.265, MPEG-4

BASIC EVENT RULES

Event Sources	Analytics Rules, Loss of Signal, Interval (heartbeat), Schedule, HTTP
Event Actions	E-mail, TCP, HTTP, Arm/Disarm

HARDWARE RECOMMENDATIONS

Designed to run on many different combinations, allowing the flexibility to deploy in any scenario.
Refer to our website for more details

VCA LICENCES

VCAProAi:	Tripwires, zones and tamper. Complete rule set including logical rules and a wide range of deep learning trackers
VCAbehaviour:	Aggressive Behaviour, Fall, Hands Up and Hand Object Interaction
Custom:	Custom project features

SUPPORTED ANALYTICS

Deep Learning Object and People Tracking	Deep learning trackers for highly accurate detection and classification of people, hands, vehicle types and objects. Optimised for business intelligence and metadata generation.
Event Rules	Intrusion detection, Tamper, Enter & Exit filters, Appear & Disappear filters, Stopped filter, Dwell filter, Direction & Speed filters, Counting, Abandoned & Removed object filter, Zones & lines, 3D calibration, Tailgating filter, Aggressive Behaviour, Fall Detection, Logical rules.
Object Detection, Tracking and Classification	Robust object tracking engine tracks through occlusion. Deep learning classification for reduced false positive rate. Multiple modes permit optimization for intrusion detection.
Object Counting	Accurate people and vehicle type counting, even in dense scenes.
Tamper	Camera Tamper Alert, Loss of Video Input Connection Alert.

SUPPORTED INTERFACES

Video Input Method	RTSP, Files (avi, mp4, mpg)
Output Data Format	Events (TCP, HTTP, SMTP, VMS / NVR / PSIM Client) Metadata (JSON)
Web Interface	HTML5 via embedded web server, No plugins necessary
API	RESTful API for 3rd party integration and customization, ONVIF profile S and T

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PROCESSOR ARCHITECTURES	SUPPORTED PLATFORMS	SUPPORTED VIDEO FORMATS
x86 ARM		H.264 H.265 MPEG 4

GPU HARDWARE	*Hardware shown has been tested with Ubuntu, maximum channel numbers are shown. Other solutions are available. Input stream configuration: 640x480, 15FPS, and high bitrate for good image quality			
	APPROPRIATE CPU REQUIRED			
Tracker	DL Object / People	DL Skeleton	Hand Object Interaction	Behaviour (Aggressive, Fall)
GPU	Number of Channels			
GTX 1660 Super	22	18	22	8
RTX A1000	32	30	33	14
RTX 3050	44	43	36	28
T1000	17	17	17	6
RTX 3070	60	45	60	30
RTX A2000 (12GB)	42	45	45	25
RTX 4060	77	81	68	40
RTX 4060 ti	101	95	108	75
RTX A4000	70	70	70	40
RTX A5000	130	130	130	60

ARM HARDWARE	*Hardware shown has been tested with Ubuntu, maximum channel numbers are shown. Other solutions are available. Input stream configuration: 640x480, 15FPS, and high bitrate for good image quality			
Tracker	DL Object / People	DL Skeleton	Hand Object Interaction	Behaviour (Aggressive, Fall)
Device	Number of Channels			
Jetson Nano	1	1	-	-
Jetson Xavier NX	5	5	6	3
Jetson Orin 4GB	5	5	5	2
Jetson Orin 8GB	8	8	8	4