WISENET

White Paper

Open Platform

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Hanwha
Techwin

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1. Overview and Background

Current video surveillance equipment provides various kinds of video analytics functions. However, general functions provided may not meet the every requirements as some specific environment requires special features.

Hanwha Techwin is making great efforts to provide products that meet market and customer needs based on its accumulated high-level video analysis technology, but there are difficulties to include all the functions required in the market. However, in this case, Open Platform is supported to add third party video analytics application with required function to network camera. Hanwha Techwin also provides related materials for third party application developers.

Just like installing an application on a smart phone and using the necessary functions, you can install the Open Platform API application on the network camera and you can use the desired function without adding any additional equipment.

2.1. Open Platform application install and start

The following is how to install and run an Open Platform application on a Hanwha Techwin network camera.

① Wisenet Webviewer Setup → System → Open SDK

② Click the browse button to select cap file of application from the user folder

③ Click Install button then Start button to execute the installed application

④ To go to app page of the application, click Go App.

2.2. Open Platform development support

Hanwha Techwin provides the materials and tools needed for development to the developer who wants to develop Open Platform application with API as below.

- Open SDK package
  : Used for development environment in Ubuntu (Linux), Tool chain and etc

- Eclipse plug-in
  : Eclipse user interface and templates

- Reference
  : Related overall manual of Open Platform

- Remote Debug viewer
  : Debug tool for Eclipse or Ubuntu shell

- Sample applications
  : Sample applications of basic features

2.3. Provided Open Platform API

Open Platform provides the following APIs.

Category	APIs
Input events	- Media events(Raw video,audio, Encoded video, Recorded Video) - Video analytics events (MD, FD, AD, Tampering Event, Enter/Exit, IV, Alarm, Audio Detect) - Network service events, Network notification events - SD card notification events - Stop application events (CPU/Memory usage high) - Error notification events - CGI commands event - RS-485 event
Output events	- Record events (Start/Stop record) - Video events (Change video config) - Audio events (Start/Stop audio) - Alarm events (Alarm output ON/OFF) - Network events - PTZ events (Pan/Tilt/Zoom control) - FTP & E-mail events - JPEG encode events - Set OSD - Stop application - Set RS-485, Send RS-485 packet - Send Metadata to RTP Client - Send Event to web CGI request - Add dynamic Event schema, Send dynamic event
Other events	- Write event log, setting changes notification, Proxy IP, Others

2.4. Compatible Open Platform application

Open Platform applications compatible with Hanwha Techwin Wisenet cameras are shown below.

Company	Application Name Link URL	Description
A.I. Tech	AI-RETAIL https://www.aitech.vision/en/products/ai-retail/	AI-RETAIL is the bundle of the intelligent video analytics functions by A.I. Tech (www.aitech.vision) dedicated to the retail market for people counting from overhead cameras and heatmap.
	AI-INTRUSION-PRO https://www.aitech.vision/en/products/ai-intrusion/	AI-INTRUSION-PRO is the intelligent video analytic plugin powered by A.I. Tech for the security market; it allows to recognize the following events of interest: the entering and the permanence of an object into a forbidden area, the presence of an object crossing a single virtual line
	AI-SMOKE http://aitech.vision/en/products/ai-smoke/	AI-SMOKE is the intelligent video analytic plugin for the security market that can be used for detecting the presence of smoke in a given area.
	AI-FIRE https://www.aitech.vision/en/products/ai-fire/	AI-FIRE is the intelligent video analytic plugin for the security market that can be used for detecting the presence of flame in a given area.
	AI-PEOPLE https://www.aitech.vision/en/products/ai-people/	AI-PEOPLE is the intelligent video analytics function for the retail market for people counting from overhead cameras by A.I. Tech (www.aitech.vision)
	AI-HEAT https://www.aitech.vision/en/products/ai-heat/	AI-HEAT is the intelligent video analytics function for the retail market for occupancy level characterization of the scene using surveillance cameras by A.I. Tech (www.aitech.vision).
	AI-INTRUSION https://www.aitech.vision/en/products/ai-intrusion/	AI-INTRUSION is the intelligent video analytics function for the intrusion detection and the perimeter protection of critical infrastructures and city surveillance by A.I. Tech (www.aitech.vision). A.I.
	AI-LOST https://www.aitech.vision/en/products/ai-lost/	AI-LOST is the intelligent video analytics function for the abandoned/removed object detection from surveillance cameras by A.I. Tech (www.aitech.vision).
	AI-LOITERING https://www.aitech.vision/en/products/ai-loitering/	AI-LOITERING is the intelligent video analytics function for the recognition of suspicious behaviors of persons from surveillance cameras by A.I. Tech (www.aitech.vision).
	AI-SECURITY https://www.aitech.vision/en/products/ai-security/	AI-SECURITY is the bundle of the intelligent video analytics functions by A.I. Tech (www.aitech.vision) dedicated to the security market for the intrusion detection and the perimeter protection of critical infrastructures
	AI-OVERCROWD https://www.aitech.vision/en/products/ai-overcrowd/	AI-ATM is the intelligent video analytic plugin for the security market that can be used for identifying abnormal behaviors near an ATM, due to the permanence of a person for a long time or to the presence of a too high number of persons near the ATM.

Company	Application Name Link URL	Description
A.I. Tech	AI-ATM https://www.aitech.vision/en/products/ai-atm/	AI- OVERCROWD is the intelligent video analytic plugin powered by A.I. Tech for the retail and business intelligence market; it can be used for raising an alarm in case there are too many persons inside an area of interest, configured by the operator.
	AI-SPILL https://www.aitech.vision/en/products/ai-spill/	AI-SPILL is the intelligent video analytic plugin for the security market that can be used for detecting the falling of persons moving in the scene taken by the camera.
	AI-ROAD 3D https://www.aitech.vision/en/products/ai-road3d/	It is possible to compute its average speed, to estimate its colour and the type to which it belongs to (truck, car, motorbike) and to identify those vehicles whose speed is above threshold.
	AI-INCIDENT https://www.aitech.vision/en/products/ai-incident/	AI-Incident is the video analysis plugin powered by A.I. Tech for traffic monitoring and smart cities, running on board of the Hanwha Techwin cameras; it can detect the presence of pedestrians, stopped vehicles, queuing or vehicles crossing a road in the wrong direction.
	AI-TRAFFIC https://www.aitech.vision/en/products/ai-traffic/	It can also detect pedestrians, stopped vehicles, queuing or vehicles crossing a road in the wrong direction.
	AI-PARKING https://www.aitech.vision/en/products/ai-parking/	It verifies whether a parking spot is free or occupied, by means of advanced algorithms for the detection and classification of vehicles based on deep networks
	AI-BIO https://www.aitech.vision/en/products/ai-bio/	It can be used to provide the retailer not only with the information related to the number of the customers inside a selling area, but also with the typology of customers, partitioned with respect to the gender and to the age.
	AI-CROWD https://www.aitech.vision/en/products/ai-crowd/	It allows to estimate the number of persons inside one or more areas of interest and generates periodic events that can be managed
	AI-OVEROCCUPANCY https://www.aitech.vision/en/products/ai-overoccupancy/	It detect overcrowding situations, raising an alarm when the percentage of occupancy inside an area is too high.
	AI-FACEDETECT https://www.aitech.vision/en/products/ai-facedetect/	It can be used for both statistical (in order to know the number of persons inside an area) and security purposes.
	AI-OCCUPANCY https://www.aitech.vision/en/products/ai-occupancy/	AI-OCCUPANCY is the intelligent video analytic plugin for the retail market that can be used for estimating the percentage occupancy inside an area.
	AI-ROAD http://aitech.vision/en/products/ai-road/	AI-ROAD is the intelligent video analytic plugin that can be used for counting and classifying the number of vehicles crossing a given area.

Company	Application Name Link URL	Description
(주)아라드네트웍스 (Arad networks)	SPNAgent http://aradnetworks.com	ARAD's SPN(Safe IP Network) is Smart Network Virtualization Solution and provides separated secure network to every devices that is connected to the internet.
스마트테크놀로지	SmartThermoVision http://www.goodst.kr/pro_fire_thermal_ip_3260CA.html	SmartThermoVision is a thermal event viewer application working on the XNB-6000. Thermal sensor consists of 32x24(768) temperature monitoring pixels.
Sprinx Technologies	Sprinx Traffic AID http://sprinxtech.com/en/sprinxtrafficaid.html	Sprinx Traffic AID is an edge-based application that can reliably detect incidents and events in traffic flow on critical infrastructure such as roads, highways, tunnels and intersections.
	Sprinx Traffic Data http://sprinxtech.com/en/sprinxtrafficdata.html	Sprinx Traffic Data is an edge-based application that has been designed for monitoring the traffic flow. It can record and store relevant statistical data including: vehicle counting and classification, traffic density and average speed.
	Sprinx Traffic PSD http://sprinxtech.com/en/sprinxtrafficpsd.html	Sprinx Traffic PSD is an edge-based application that allows the detection of stopped vehicle and pedestrian in a tunnel or on a roadside such as hard shoulders and emergency laybys.
	SprinxTrafficFlow http://www.sprinxtech.com/en/sprinxtrafficflow.html	Sprinx Technologies, Spirit of Research and Innovation, is an Italian software development & engineering company, focused on designing and providing intelligent video surveillance systems for traffic and transportation industry.
FF Group	NumberOk EDGE https://sites.google.com/ff-group.org/hanwha	NumberOk EDGE is an ANPR application working on Hanwa X-series cameras. License plates are read at speeds up to 160km/h.
Camcloud	Camcloud https://www.camcloud.com/hanwha-samsung	Camcloud is a hardware-free cloud video surveillance solution perfect for business, including retail, restaurants and multi-location enterprises.
Foxstream	FoxCounter : PEOPLE COUNTING http://www.foxstream.us.com/flow-management/products/foxcounter/	FoxCounter is Foxstream's edge based implemented software for people counting. This function is now fully integrated in the Samsung Techwin WiseNetIII range of professional cameras.
IPCamLive Ltd.	WebStreaming - IPCamLive Camera Streaming Application https://www.ipcamlive.com/	IPCamLive Camera Streaming Application Live video on your web - get it easy! IPCamLive provide video broadcasting service for IP cameras. Using our service you can easily embed the live video of your camera into your web page.
Dilab	HNPR http://dilab.co.kr/sub2.htm	LPR is a softwae technology which enhances efficiency of vehicle management and controls by extracting letters from the license plate of a moving vehicle and automatically recognizing the letters and figures.

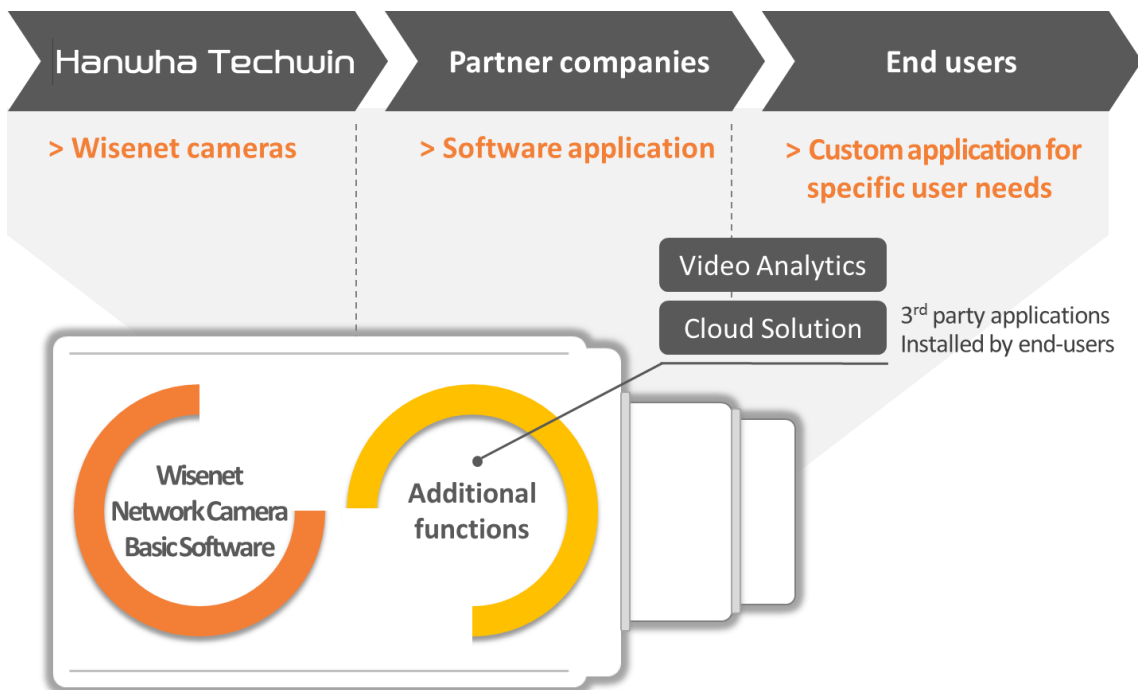| Company	Application Name Link URL	Description
IPCamLive Ltd.	WebStreaming - IPCamLive Camera Streaming Application https://www.ipcamlive.com/	IPCamLive Camera Streaming Application Live video on your web - get it easy! IPCamLive provide video broadcasting service for IP cameras. Using our service you can easily embed the live video of your camera into your web page.
Dilab	HNPR http://dilab.co.kr/sub2.htm	LPR is a softwae technology which enhances efficiency of vehicle management and controls by extracting letters from the license plate of a moving vehicle and automatically recognizing the letters and figures.
3Y-RetailFlux	PHeat – Heatmap Analytic http://www.retailflux.com/en/pheat-heatmap-analytic/	PHeat is an advanced video analytic application that can generate historical summaries of human movements in heatmap format.
	StoreFlux – Shopper Flow http://www.retailflux.com/en/storeflux-shopper-flow/	StoreFlux integrates the heatmaps generated by CCTV cameras with actual floor plans. By this way, a holistic view of shopper/people flow can be illustrated.
	PZone – Zone Analytic http://www.retailflux.com/en/pzone-zone-analytic/	PZone is a unique video analytic application that can detect shopping activities at the pre-defined zones. PZone reports include average dwell time, number of passersby and impressions.
	PQueue – Queue Management http://www.retailflux.com/en/pqueue-queue-management/	PQueue is the queue management solution developed by RetailFlux. The application can detect the number of people standing at a pre-defined queue region in real-time.
	PCount - People Counter http://www.retailflux.com/en/pcount-people-counter/	PCount is the new generation people counter application offering high accuracy counting for the professional CCTV integrators.
Intelligent Security Systems dba ISS	SecurOS EdgeAUTO http://isscctv.com/open-platform-securos-edge-auto/	SecurOS EdgeAUTO is an integrated solution for license plate capture and recognition, ideal for parking, access control, and border crossing installations;
Facit Data Systems	Facit Heatmap http://www.facitdatasystems.com/heatmap.html	Facit Data Systems is an international software development and integration company that specialises in the design and application of retail video analytics systems.
	Facit PeopleCounter http://www.facitdatasystems.com	Facit Data Systems is an international software development and integration company that specialises in the design and application of retail video analytics systems.
TechnoAware	VTrack-IntrusionEdge http://www.technoaware.com	The video analysis function VTrack-IntrusionEdge-S allows to detect and notify automatically and in real time the intrusion within virtual areas or the crossing of virtual lines by targets of interest.
PlateSmart	PlateSmart Embedded LPR for Open Platform www.platesmart.com	PlateSmart's ARES app for Samsung WiseNet III open-architecture cameras extracts images for Automatic License Plate Recognition (ALPR) from a video stream inside the camera.

Company	Application Name Link URL	Description
IntuVision, Inc. 	IntuVision, Inc. http://www.intuvisiontech.com/products/samsung- edge-analytics.php	intuVision's Enter/Exit event rule detects people or vehicles entering or exiting the camera view from a user drawn zone.
	intuVision Activity Detection http://intuvisiontech.com/products/samsung-edge- analytics.php	ntuVision's Activity Detection is easily configured and run entirely on Samsung cameras, using intelligent video analytics to automatically detect people/vehicles entering a secure area.
	intuVision Line Crossing	intuVision's robust Line Crossing ensures that users are immediately informed of people/vehicles moving past a configurable virtual line, detecting trespassers or counting people and vehicles.
Veracity LTD. (UK) 	TRINITY Direct To Storage Surveillance System http://www.veracityglobal.com/products/storage- systems-for-video-surveillance/trinity.aspx	TRINITY Direct to Storage from Samsung Open Platform IP Cameras The unique TRINITY system architecture eliminates the requirement for NVR servers, using Samsung WiseNet III IP cameras recording directly to Veracity's COLDSTORE sequential recording system.
Agent Vi 	Agent Vi Analytics http://www.agentvi.com/94-Support-240- Supported_Edge_Devices#Samsung	Agent Video Intelligence (Agent Vi™) is the leading global provider of open architecture, video analytics software.
Arteco 	Video Analytics http://www.arteco-global.com	ARTECO has developed an Automatic License Plate Recognition (ALPR) application that can be run on board Samsung Techwin's Open Platform WiseNetIII cameras and domes.

3. Conclusion

Hanwha Techwin network cameras can provide the right solution for your environment with additional functions such as LPR (License Plate Recognition), heatmap, people counting and etc using Open Platform.

We hope that you will be able to utilize Hanwha Techwin network camera more effectively by adding professional video analysis developers' application to through Open Platform.

WISENET

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