

WISENET

White paper

오픈 플랫폼 (Open Platform)

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Contents

1. 서론

2. 오픈 플랫폼(Open Platform) 설명

- 2.1. 오픈 플랫폼 어플리케이션 설치 및 실행
- 2.2. 오픈 플랫폼 개발 지원
- 2.3. 제공 오픈 플랫폼 API
- 2.4. 호환 오픈 플랫폼 어플리케이션

3. 결론

현재의 영상감시 장비는 다양한 종류의 영상분석 기능을 제공하고 있는데, 사용되는 환경이나 목적이 다양한 만큼 제공되는 일반적인 기능으로는 특정 환경에 특화된 영상분석 또는 응용 기능에 대한 요구를 만족시키지 못하는 경우가 생기기도 합니다.

한화테크윈은 자체 축적한 높은 수준의 영상분석 기술을 바탕으로 시장과 고객의 니즈를 만족하는 제품을 제공하기 위해 많은 노력을 기울이고 있지만, 시장에서 요구되는 모든 기능을 제품에 담기에는 어려운 점이 있습니다. 하지만 이러한 경우를 위해 사용자가 원하는 기능을 가진 서드파티 영상분석 어플리케이션을 네트워크 카메라에 추가할 수 있도록 Open Platform 환경을 지원하고 있습니다. 한화테크윈은 서드파티 어플리케이션 개발 업체를 위해 개발 환경을 지원하며, 네트워크 카메라는 시스템에 어플리케이션을 설치, 삭제, 실행할 수 있는 기능을 제공합니다.

Open Platform을 통해 API 형태의 어플리케이션을 네트워크 카메라에 설치하면, 스마트폰에 어플리케이션을 설치해 필요한 기능을 이용하는 것처럼 원하는 기능을 별도 장비 추가 없이 사용할 수 있게 됩니다.

2.1. 오픈 플랫폼 어플리케이션 설치 및 실행

한화테크윈 네트워크 카메라에 다음과 같은 방법으로 오픈 플랫폼 어플리케이션을 설치하고 실행할 수 있습니다.

- ① [Wisenet Webviewer](#) 설정 메뉴 → 시스템 탭 → Open SDK 선택
- ② 검색 버튼 클릭 후 사용자 폴더에서 이용하려는 어플리케이션(.cap) 선택 후 설치
- ③ 시작 버튼을 눌러 어플리케이션 실행
- ④ 앱 화면 선택 시, 해당 어플리케이션에서 제공하는 웹 페이지로 이동

2.2. 오픈 플랫폼 개발 환경

한화테크윈은 API로 Open Platform 어플리케이션을 개발하려는 업체에 아래와 같이 개발에 필요한 자료와 도구를 제공합니다.

- Open SDK 패키지
: Tool chain 등 우분투 내 개발자 환경을 구성에 사용
- Eclipse 플러그인
: Eclipse의 유저 인터페이스 및 각종 템플릿을 플러그인의 형태로 제공
- 참고 문서
: Open Platform 관련 전반적인 매뉴얼 제공
- Remote Debug viewer
: Eclipse 혹은 우분투 셸을 이용해서 디버깅 가능
- Sample applications:
: 기본 기능이 구현된 Sample application을 제공하여 응용사용 가능

2.3. 제공 오픈 플랫폼 API

오픈 플랫폼에서는 다음과 같은 API를 제공합니다.


구분	API 항목
Input events	<ul style="list-style-type: none"> - 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	<ul style="list-style-type: none"> - 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
그 외 events	<ul style="list-style-type: none"> - Write event log, setting changes notification, Proxy IP, Others

2. 오픈 플랫폼(Open Platform) 설명

2.4. 호환 오픈 플랫폼 어플리케이션





한화테크윈 와이즈넷 카메라와 호환되는 오픈 플랫폼 어플리케이션은 다음과 같습니다.

제작사	Application Name Link URL	Description
	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.

제작사	Application Name Link URL	Description
	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-SPELL https://www.aitech.vision/en/products/ai-spill/	AI-SPELL 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-FACEDTECT 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.

제작사	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.

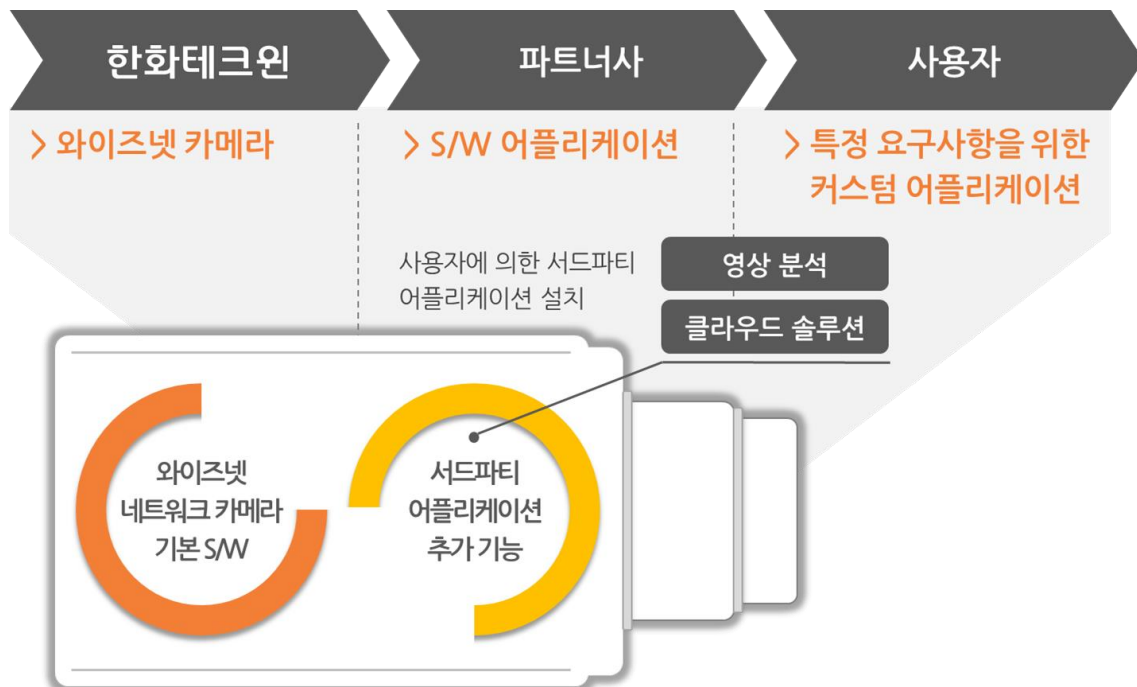
제작사	Application Name Link URL	Description
IPCamLive Ltd. 	WebStreaming - IPCamLive Camera Streaming Application https://www.ipcamlive.com/	IPCamLive Camera Streaming Application Live video on your web - get it easy! IPCamLive provide video broadcasting service for IP cameras. Using our service you can easily embed the live video of your camera into your web page.
Dilab 	HNPR http://dilab.co.kr/sub2.htm	LPR is a software 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.

제작사	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	intuVision'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.
Artec 	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. 결론

한화테크윈의 네트워크 카메라는 오픈 플랫폼을 이용해 차량 번호판 식별 및 교통량 판단 같은 영상분석 기능과 매장 관리에 활용할 수 있는 히트맵 및 피플카운팅 같은 통계 기능 등 다양한 기능을 사용자의 요구 사항에 따라 추가하여 효율적으로 여러 환경에 적합한 솔루션을 제공할 수 있습니다.

오픈 플랫폼을 통해 전문 영상분석 개발사들의 어플리케이션을 한화테크윈 네트워크 카메라에 추가해 영상감시 장비를 더욱 다양하고 효율적으로 활용해 보시기 바랍니다.



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