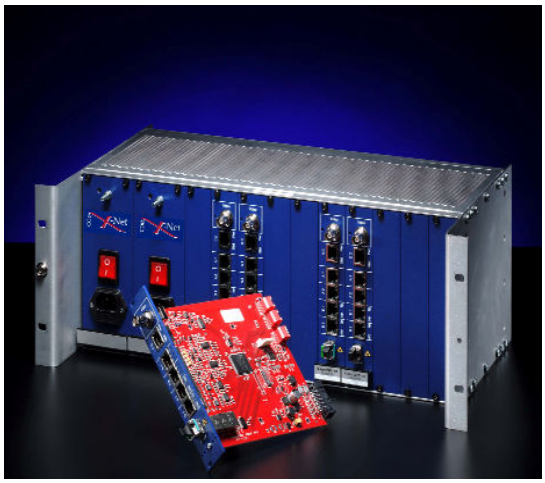
COE X-Net VI



X-Net G3 codec incorporates advanced Intelligent Video Analytics features which enhance the productivity of CCTV monitoring staff

CCTV networks are rapidly increasing in size and it is not uncommon to come across systems with thousands of cameras. As a result, the number of cameras which each CCTV operator has to monitor is also increasing. This can result in operators missing crucial events.

COE VI is a high-end video intelligence product that has been designed by seasoned security professionals with years of field experience. It is engineered from the ground-up to accommodate large-scale camera networks with unrivaled ease of use, surveillance performance, expandable functionality and network scalability.

System Architecture

Currently, two types of video analsysis systems are available in the market:

- On Chip Analysis

  The entire analysis takes place on the codec on uncompressed video, thus minimizing the false alarms due to artefacts caused by compressing the video. But this process contends with video compression for resources, thus degrading the quality of the compressed video. Additionally, it is only possible to have one analysis function per camera, i.e. not possible to have perimeter security and abandoned object detection using the same camera. With video intelligence technology evolving rapidly, on chip analysis also hampers future upgrades as one is limited by the DSP already installed on the device and hence can't take advantage of future upgrades to technology

- On Server Analysis

  The video is brought back to a central control room and then analysis takes place on this compressed video. On one hand, this process allows multiple detection rules per camera and also allows future upgrades to video analysis detection but the artefacts introduced by video compression reduces the performance of the analysis, thus increasing the false alarm rate.

X-Net VI Architecture

- Hybrid architecture offering best of both worlds - COE VI has a unique architecture which distributes analysis between X-Net Codec G3 and a backend server. This ensures that the analysis happens on uncompressed video, yet the bulk of processing is carried out at the backend server which can support multiple detection rules per camera and can also be easily upgraded to support additional rules as and when these become available.

- Infinitely Scalable - Each backend server can support analysis of upto 100 cameras and additional servers can be easily added to support additional cameras.

- Low Bandwidth requirement - The bandwidth required for detection is only about 30kbps. Only suspicious activity will trigger an alert and activate the video streaming and recoding process. This feature can significantly reduce the video storage requirements.

- Complex rules suport- The system supports complex rules which can be a combination of one or more rules. For example, only raise an alarm when a person is crossing the tracks and a train is approaching at the same time

- SDK for third part integration - The system is integrated with COE's Genesys platform and an SDK is also available for easy integration with 3rd party applications.

Applications - Airports

Perimeter Fence Protection - Detects suspicious loitering activity near airport perimeter fences, COE VI creates a virtual geo-fence around an area of interest. Any individuals or vehicles loitering in the secured area of interest will trigger a real-time alert. The system provides detection under all weather conditions and also works with thermal imaging and Forward Looking Infrared cameras.

Parked Aircraft Protection - Detects unauthorized movement around a parked aircraft. Provides anti-tampering and anti-theft protection. COE VI addresses security needs of VIP, military and government officials transiting through airports. Any entry to the area of interest will trigger a real-time alert and assist in capturing an intruder

HAZMAT & Fuel Protection - Highly exposed permanent fuel storage, distribution facilities and mobile HAZMAT containers can be better protected with an COE VI perimeter geo-fence. Leaks, smoke & fire can be automatically detected by COE VI. Loitering of unauthorized workers will trigger real-time event notification.

Terminal Area Protection - COE VI can detect an unattended bag that is placed or left in a crowded terminal. The application can be set to detect objects of a predefined size, or notify security officers if a bag was left unattended over a predefined period of time.

Applications - Railways

Tracks Protection - Detects suspicious motion near, on or around railway tracks. Identifies sabotage or bomb placement attempts using CCTV and night, all weather vision Forward Looking Infrared cameras. Any geo-fence (red boundary line) penetration will trigger an alarm.

Moving Train Protection - Detects suspicious vicinity of intruders approaching a moving train near bridges or tunnels. X-Net VI intelligently detects un-authorized movement (footstep or vehicle) based on an object's size, speed, direction, distance traveled and more.

Terminal Area Protection - Detects an unattended bag on a crowded platform. Immediately detects and notifies if a person has fallen off the platform or if an object has been permanently placed on the tracks.

Graffiti and Vandalism Protection - Detects graffiti drawing, unauthorized ad placement and other types of vandalism. COE VI notifies security officers in real-time to prevent further damage.

Managing Thousands of Cameras - Railway and subway operators manage large-scale distributed surveillance networks. Numerous cameras are deployed in, around and between stations to establish the required security. COE VI is engineered from the ground-up to accommodate large-scale, camera networks with unrivaled ease of use, surveillance performance, expandable functionality, network scalability at a competitively low price point.

System Capabilities

Video Motion Detection - Detect various object types (humans, vehicles, animals, etc.)moving in three ways: inside a detection region, entering or exiting a closed area (loop) or crossing a virtual line (such as a perimeter). The system can distinguish between different object types such as people, vehicles or animals by their size and other parameters. The user may add custom object types (e.g. small boat) to the object types' library.

Behaviour Detection - Detect unusual behaviours such as Loitering, queue detection and Tailgating (for example, generates an alarm if two people try to enter a restricted area one after other such as at a turnstile)

Crowd Detection - Allows the user to define a region in the camera's field of view and receive an alert when the region is overcrowded above a specified threshold during a given time period. It operates indoors and outdoors in all weather

Counting - Detect and count various object types (humans, vehicles, animals, etc.) crossing a line or lines according to predefined parameters.

Theft Detection - Detect objects that have been moved or removed from their position. Unlimited number of stationary objects placed within view of the camera can be tracked

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