



CASE STUDY

TRAFFIC RULES VIOLATION based on Logipix city surveillance

Solution

Ellips GA Co Ltd. (The leading company in the country of Armenia related to security devices) has installed Logipix multi-megapixel IP surveillance system with 80 pieces of Logipix 15MP D/N cameras to monitor traffic violations at 20 traffic light controlled junctions in the capital of Armenia. It is an ongoing project, wherein the final goal is to observe 270 crossroads (80 intersections) all over the city. The operator company (Security Dream) manages the multi-megapixel system using STP Control Center software in the monitoring centers at every crossroad. The system is capable to store even 240 Tbytes of surveillance data by 20 Logipix Network Video Recorders.

Benefits

Utilizing the enormous picture resolution and image quality of Logipix cameras, operators at now can effectively register traffic irregularities in Yerevan. 15 Megapixel sensors provide to observe a large scale area with highly detailed and sharp images, therefore recognizable plate numbers of the crossing vehicles can be easily captured. Leveraging the LNVRs' LPoE connectors Logipix cameras could be powered without any external power supply, thus the installation and operation costs of the system could be significantly decreased. Using zone extenders with special inputs in the LNVRs, the system of traffic lights was able to be connected to Logipix system, therefore states of the traffic lights can be visualized on the camera images by a unique software development. Employing the special feature of Control Center, operators can deliver video streams of the offenders without hesitation.

Specification & Motivation

As the city increases so does the number of traffic offenses. The main goal of Ellips Ga Co Ltd and Security Dream Co, Ltd was to build out a complex Logipix multi-megapixel IP surveillance system at 20 traffic light controlled crossroads in the city of Yerevan, wherewith violations could be easily proved and the offenders could be impeached. Extra high resolution and minute details were required for plate number recognition. Ellips needed a surveillance system, which for the controllers of the traffic lights could be connected. Thus the states of the lights can be permanently monitored in the Control Center without any extra camera being needed which would record pictures of it. Further expectation was to integrate one movable analog PTZ camera into the IP system at every crossroad. Moreover it was a crucial task to download videos immediately of anomalies in the traffic.

Long description

City of Yerevan is the capital of Armenia. With the growth of the economy and the population the city has become the home of a teeming urban community. Number of the vehicles in the traffic has been multiplied over the last few years and so do the violations.

Ellips Ga Co Ltd and Security Dream Co, Ltd, in cooperation with the Yerevan Police Department were planning to install a high-definition surveillance system at the crucial traffic light controlled crossroads to penalize all the offenders, thus reducing the number of irregularities and improving traffic mortality. Logipix was the appropriate choice for them.

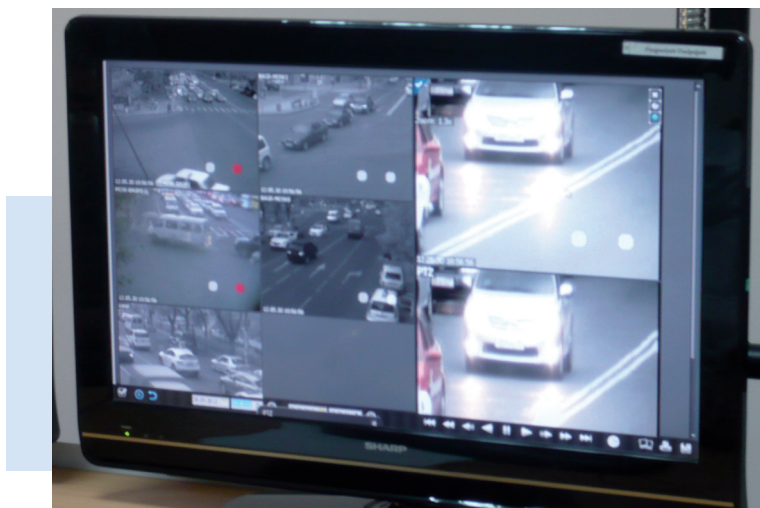
Since January 17 surveillance and speed cameras have registered 22,600 violations of traffic rules. A total of 4,750 notes about violations have been sent to legal entities, penalties have been levied from 1,800 addressees of them. According to head of the Achilles Center for Drivers' Rights Eduard Hovhannisyan, the violations related to speeding have decreased.

"Now the violations at intersections dominate, they are five times more than the speeding violations," Hovhannisyan says.



Operators at Security Dream Co, ltd. were completely impressed how lightly they can retrieve evidence from the offending vehicles with Logipix video management software. Control Center is a user friendly development. After system configuration, operators could learn how to manage the system in just an hour.

Due to the flexibility of Logipix system, the integrators have been able to solve the problem to monitor the states of the traffic lights in every intersection without any serious investments. The controllers of the traffic lights are connected to the Logipix Network Video Recorders through a zone extender in every intersection, and by a brand new software development, the states of the lights can be visualized on the camera pictures.



The Logipix system, including the cameras, the Network Video Recorders and monitoring software, use JPEG2000 for video compression which is exceptionally better than any other solution currently in video surveillance. Utilizing the unique embedded multi-stream of JPEG2000 fast and seamless video transmission is ensured over the provided 50Mbit network bandwidth.

Using 15MP Logipix cameras, plate numbers are easily recognizable at the crossroads. Operators can get clear and sharp images of the desired picture details. At the monitoring center they can work with full resolution zoomed enlargements by a unique Logipix application, the so called Logi-zoom function. Logi-zoom is a recorder side zoom function, which significantly increases the efficiency of supervision. It allows to send images of the requested area of the multi-megapixel picture - stored in the recorder - in high resolution towards the monitoring center, whilst the rest of the picture is still transmitted in lower resolution. Logi-zoom is working with live and archive video as well.

Archive videos can be downloaded promptly by the operators with a specially developed Control Center function. With Download delivery, operators are able to download a video stream to a computer immediately with a pre-defined time interval by only a single click. Therefore not only a single picture is downloaded of the traffic offenders, but a 17sec long video stream with recognizable plate number and car type. Seven seconds are downloaded before the incidence and 10 seconds after. If another violation occurs within 10 seconds after that the operator has pressed the button and he/she presses it again, than the videos are downloaded interlinked. Employees at Security Dream Co, Ltd. can lightly deliver processed information of the traffic offenders towards the Yerevan Police Department, whereby they can impose the penalty checks.



“I am very satisfied with the final results of the system. It enables my operators to fully observe the intersections in the city and fix the violations which occur on a daily basis. Overall, the system and the software are very advanced and at the same time very simple to operate.” Vahagn Aganikian - Executive Director of Security Dream Co, Ltd.

Taking to consideration all of these functions, operators just have to press a single button on their computer keyboard when they notice any violation on the Control Center’s Video monitor, and the recorded video is downloaded right away, from which the traffic offenses can be decisively proved.

“Most of our drivers scrupulously pay their fines, because in case of not paying it within 30 days it triples on the 31st day, and in 60 days it becomes five times more,” says Hayk Sargsyan, deputy head of the Road Patrol Police of Armenia.

As of now 145 million drams (about \$ 374,000) has been levied from drivers whose violations were registered by surveillance cameras.

The system is capable to store 240Tbytes of surveillance data (depending on the number and storage capacity of the integrated HDDs). In case of human error, for example if operators have missed a crucial event for some reason, the videos stored in the Logipix NVRs can be easily searched back by the Control Center.

At the crossroads of Yerevan it was a crucial task to connect analog PTZ cameras to the IP system. The solution was provided by the Logipix Hybrid extender. The hardware and software configuration of the devices is exceedingly simple, thus the desired analog cameras could be integrated in the system seamlessly.

Ellips Ga Co Ltd, Security Dream Co, ltd, and the Yerevan Police Department are completely satisfied with the features of the system and with the professional supporting as well what they have received from STP Ltd., therefore they are planning to widen the system for further junctions in the near future. The main goal is to extend the Logipix system for a total of about 80 intersections all over the capital city of Yerevan.