

Surveillance and Access Control:

What is finally happening is adaptive streaming of surveillance video

Wireless connectivity and real-time communication have given video surveillance and access-control systems an intelligent edge. Let us take a look at what is cutting-edge in security systems. Kaushal Kadakia, product manager, video surveillance solutions, Matrix ComSec, speaks with Dilin Anand from EFY

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tion module, which can monitor specific objects of interest and alert the user about the movement of a particular object.

Q. What are the biggest challenges faced while designing security systems in India?

A. When designing for bigger companies, one problem that is faced is that the infrastructure is unable to handle all cameras together. Infrastructure optimisation is one way to solve this.

Scalability of cameras has increased from having just a few cameras to over 100,000 cameras. Challenges faced here are with respect to the lack of centralised control, which is magnified by the lack of a wide bandwidth. Rising infrastructure management expenses by security customers is another problem area.

Q. What was the biggest critical challenge solved by your R&D team recently?

A. One understated, yet critical, challenge was with delivering content in real-time. Security has to be real-time, as passive communication does not let you prevent theft but only investigate it. In the past, thieves would take the surveillance device with them, leaving no evidence behind.

Now, if an event takes place under the eye of a modern surveillance system, it will identify the intrusion event, send out an SMS and an email with a snapshot of the intrusion in real-time.

Q. What has changed in video surveillance technology?

A. Previously, these systems were designed as closed systems with a recording device and cameras connected to it, leaving the user with just a recording apparatus.

So if someone using such a system was robbed, he or she would have to manually go through all data in the recording apparatus to figure out what had happened. To solve this problem, there is now a thing called an investiga-

Q. Please give an example of how this works?

A. Let us take the example of a jewellery showroom. On the counter is a piece of jewellery that goes missing. Now, instead of going through the entire piece of data and trying to figure out who stole it, what the owner can do is simply select a particular area. Any time the jewellery moves out of that area, a popup comes right up, allowing the investigator to start the work from that point onwards.

Q. For the Indian market, the biggest challenge is bandwidth. How have your engineers tried to solve this issue?

A. For this problem, we divided a single image into multiple images coming from a single camera. This means selecting part of an image as an area of high importance, which gets processed in full high-definition (HD); surrounding areas are processed with a little lower resolution as these are areas of lower importance.

For example, if there is one camera in a room, that room is not considered important. But if someone enters the room, he or she is of higher importance and would be recorded with maximum clarity; lower interest areas could now be recorded with missed frames or lower pixels. What is finally happening is adaptive streaming of surveillance video.

Q. What is happening in access control?

A. This is definitely an area where innovation is happening. Most people used to think that access control simply meant that there is a lock on the door that could be biometric or smartcard based, and which does not stop people from going inside. However, it has now become smarter to the point of understanding what situations should allow a person or a group to enter the area.

Q. Could you give an example of this?

A. One simple example is the CEO scan. Until and unless the CEO has entered the cabin, no one else will be able to enter the secure area. Once he or she has entered, anyone with the required credentials and access to the door may enter. Some parameters currently used are a combination of time periods, pre-determined area or people of interest. ●