

## “Formula One” in the capital of Azerbaijan: every move controlled by Axis.

Axis IP cameras form the backbone of video surveillance system at Grand Prix of “Formula One” in Baku.



### Organization:

Baku City Circuit

### Location:

Baku, Azerbaijan

### Industry segment:

Stadiums/venues

### Application:

Safety and security

### Axis partner:

Milestone, Eurodesign

### Mission

In June 2016 Baku met its first world championship Grand Prix in circuit car racing “Formula One”. Fulfill to the requirements of International Automobile Federation (FIA) and Formula One Management (FOM) as a host of the venue company Baku City Circuit was to deploy a digital video surveillance system to directly monitor the competition in progress. The idea was to view live video from cameras and play records from archive.

### Solution

As a part of the project, the contractor installed 39 AXIS Q6044-E Network Cameras at each circuit section including the race track, run-off areas and pit lane. The cameras were selected according to the following criteria: video streaming via IP protocol, high resolution, color image, high optical and digital zoom ratio, digital image stabilization, dome design, outdoor readiness.

In addition, AXIS Q6044-E features some capabilities that reduce the delays during data communication via IP network: high information processing rate, high image encoding speed and high shutter speed.

### Result

The video surveillance system has successfully shown its worth during the racing weekend. Image was delivered using two video streams, one for a video wall located in a race control room and another for a digital video storage. The third video stream was converted into analog signals and delivered to FIA personnel. The venue host expects to benefit from this infrastructure during the “Formula One” Grand Prix in Baku and at least for another 4 years ahead.

**“According to the requirements specified in tender documentation the whole video surveillance system at “Formula One” race track in Baku shall be based on IP protocol. The advantage of Axis cameras over analog ones is not confined to a higher resolution and image quality, integrated PTZ capability, PoE technology, flexible and cost-effective infrastructure and high reliability, but it also provides an opportunity to integrate the network technology with other IP solutions, such as digital video storage device, third-party dedicated software and single resilient IP network for the whole video surveillance system.”**

**Rovshan Akhmadov, Eurodesign Technology Director.**

### Axis IP cameras involved in the project

AXIS Q6044 Network Camera with 30x optical zoom, wide viewing angle, quick pan and tilt delivering HDTV image (720p) was designed for urban streets and such places as passenger stations, airports and stadiums. This camera features an electronic image stabilization capability that not only provides high image definition and usability in windy weather, but also saves the bandwidth and storage space by reducing the video file size.

AXIS Q6044-E supports 256 automatic preset positions within the viewing angle in guard tour mode and offers tilting 20° above the horizon line to expand the viewing angle beyond the installation position. Moreover, the camera supports High Power over Ethernet that simplifies the installation and eliminates the need for separate power cables.

### Application features of Axis cameras

Video surveillance system featuring AXIS Q6044-E represents a complete IP solution enabling to monitor all the areas inside the perimeter of the “Formula One” race track in Baku. The additional network resilience is ensured with 39 dome video cameras mounted on the poles along the race track and connected to the switching devices having the topology of two logical rings. Network devices are integrated with digital video storage, video wall management software and single IP network dedicated for the whole video surveillance system.

Thus, Milestone XProtect® Small Wall software installed at the working stations serves to display one real-time MJPEG video stream on the video wall made up of 18 professional 55" LED screens located in the race control room. Two AXIS Control Board T8310 joysticks connected to the working stations with installed Milestone XProtect® Smart Client software are used for PTZ control (in cameras with minimum optical zoom 20x and digital zoom 10x). The image is displayed in live mode without compromising the quality (HD resolution, 24 fps). This gives the racing director an opportunity to see whole race track, analyze the incidents and other episodes, control the drivers activity and etc.

The second H.264 video stream is recorded into the EMC data storage using Milestone XProtect® software. The storage capacity enables to store the video records from all the cameras for at least three days and view them on the video wall if necessary.

The third H.264 video stream is used to send the analog signal from each camera to the personnel of International Automobile Federation (FIA). AXIS P7701 decoders are used to convert the digital signal into the analog one.

