

## The road to safety.

Axis Communications and Proxim pave the way for increased safety and security on one of Greece's most rugged motorways.



Organization:  
Egnatia Motorway

Location:  
Greece

Industry segment:  
Transportation

Application:  
Security and traffic  
flow monitoring

Axis partner:  
Proxim Wireless

### Mission

The Egnatia Motorway in Greece is one of the largest road construction projects in Europe and creates a vitally important link to the rest of Europe in one direction and Asia in the other. Egnatia Motorway wanted to develop a wireless traffic surveillance project along the 9 km of the motorway that runs from the Metsovo interchange to the Peristeri interchange. Despite being only 9 km in length, this route has the most difficult and varied terrain on the motorway, hence the need for surveillance cameras.

### Solution

Egnatia Motorway installed a total of 14 AXIS 213 PTZ Network Cameras to monitor traffic flow and provide surveillance and security at the point of the two interchanges, inside six different tunnels and along two bridges. Egnatia Motorway also installed AXIS Camera Station video management software that provides video monitoring, recording and event management functions. The surveillance system also integrated Tsunami

MP.11 5054-R wireless outdoor routers from Proxim. The combined solution met Egnatia Motorway's need to install secure, high-definition network cameras in areas where fixed line broadband was not readily available.

### Result

Following the successful deployment of the project, the region's control centre now has full command over the 14 AXIS 213 PTZ Network Cameras. The combination of high bandwidth and low latency of Tsunami MP.11 5054-R ensures that high quality images are constantly available to motorway staff. Staff members are also alerted to unusual traffic events so they can respond accordingly. The system is completely secure and can be managed remotely.

"This link of the Egnatia Motorway poses a major challenge, due to its rugged terrain and varied elevations. Given these challenges, it's essential that the network maintains continuous functionality, especially in inclement weather, when most accidents occur. This combined solution from Axis and Proxim met all our needs for image quality, security and reliability and remote access in this unforgiving environment."

Yannis Zervas, General Manager (owner) of Vayan Wireless.

## Challenging terrain

Before the project started, Egnatia Motorway engaged Vayan Wireless to undertake a comprehensive study to determine the best approach to the project. The study revealed a number of unique factors for consideration. The complexity of the terrain meant that a more traditional point to multipoint topology would be impossible. Instead, Vayan Wireless recommended a serial (cascading) scheme with multiple point to point junctions. IP-based surveillance cameras would deliver the necessary functionality for the project including pan, tilt zoom functionality, high definition images and warnings of irregular 'events' such as a traffic accident.

The network topology meant that load would gradually increase because of the cameras, peaking at the final point. There were 13 junctions that required installation along the length of the highway and six of them were not visible because of tunnels and bends in the Egnatia Motorway. The cameras needed to be spaced relatively far apart - approximately 1 km between each one.

Another key requirement was that the cameras and the wireless equipment needed to stand up to the adverse weather conditions which prevail in the area, such as continuous rainfall for most of the year, very low temperatures, strong winds and a high snowfall during the winter. Vayan Wireless also recommended that the system output should not vary noticeably when large vehicles pass, especially between tunnels.

SAFENET SA, a video surveillance and wireless business based in Greece, won the contract to develop the wireless traffic surveillance project.

## The road to success

In order to satisfy the complex mix of requirements dictated by the survey, SAFENET SA recommended a combination of AXIS 213 PTZ Network Cameras and Proxim's Tsunami MP.11 5054-R.

The Axis network cameras met a number of requirements dictated by the environmental conditions including pan, tilt, zoom functionality, the ability to operate under all light conditions and a vandal-resistant and outdoor-proof housing. Crucially, the cameras can send alerts about unusual traffic events to motorway staff. To ensure high-quality video transmissions, SAFENET SA insisted that the cameras initially support the Motion JPEG video format and later MPEG-4. Since the AXIS Camera Station supports both high quality recordings in Motion JPEG and MPEG-4 format, this requirement was easily met. The built-in 26x optical zoom and the auto focus lens + 12x digital zoom ensured that the camera could be placed 1 km apart as required.

The combined solution delivered excellent performance and met Egnatia Motorway's complex mix of requirements. As a result, Axis and Proxim plan to collaborate on similar projects in other parts of the world.



**Proxim**  
wireless