

## Power in miniature: compact Axis cameras provide security for a 120-ton locomotive.

Mednogorsk Copper-Sulphur Plant Ltd. launches video surveillance system based on Axis IP cameras to monitor its cargo train vehicle.



### Organization:

Mednogorsk Copper-Sulphur Plant Ltd.

### Location:

Mednogorsk, Russia

### Industry segment:

Critical infrastructure

### Application:

Freight transport security

### Axis partners:

Quorus AKS CJSC, ISS

### Mission

Mednogorsk Copper-Sulphur Plant (MCSP) is a large-scale non-ferrous metal processing enterprise that was founded in 1939 and today forms a part of Ural Mining and Metallurgical Company. A shunting locomotive TEM2 is used to move carriages loaded with raw materials at the territory of the enterprise and beyond it. This locomotive had to be equipped with a reliable video surveillance system to ensure the security along the carriages as well as on the lateral hood faces and in the driver cabin.

### Solution

The main feature of this project is integration with ISS SecurOS Premium software and IP cameras. Video is sent to the server located in the security control room via the Wi-Fi wireless network.

The specialists of Quorus AKS carried out the installation of Axis IP cameras, auxiliary hardware and software for MCSP. Five AXIS P3905-RE Network Cameras designed for vehicle onboard installation were selected for the locomotive video surveillance.

### Result

The video traffic from IP cameras installed at the locomotive is transferred online to the control room. Thus, Axis IP cameras provide an opportunity for the security staff to monitor the area around the locomotive as it moves, the cargo it carries and the work of the operating crew. Therefore, now there is a chance to timely prevent any unauthorized actions, receive information about the locomotive's progress and respond to emergency situations.

**“We already have a positive experience of using Axis IP cameras at our enterprise. This project implies sending the video signal from the cameras installed at the locomotive over wireless network into the ISS SecurOS program. This solution enabled our security staff to follow every locomotive movement online and quickly respond to accidents.”**

Security officer of MCSP Ltd.

### Project features

In case the shunting locomotive carries a valuable cargo, the security staff of the metal manufacturing enterprise must permanently monitor the situation along the carriages, locomotive fore and aft, on both the lateral hood faces and in the driver cabin. Thus, the purpose of this solution was to ensure that the signal is sent online to the server with ISS SecurOS software – a dedicated software for video surveillance systems that was previously used by the customer.

Along with equipping the locomotive with Axis cameras MCSP wireless network was also upgraded as a part of the project. Considering that at the beginning, the Wi-Fi network covered only 80% of the enterprise territory. The signal was supposed to be sent via this network. Every time the locomotive left the network coverage area the video needed to be temporarily saved at the local storage of every camera, and when it returned into the coverage area this video would be automatically sent to ISS server.

For this purpose all five cameras were provided with 64 GB flash memory cards. The electric cabinet with PoE-enabled switch (Power over Ethernet), an advanced technology providing electrical power to cameras over standard Ethernet twisted pair cable, is installed in the driver cabin. The cameras installed outside the locomotive are equipped with the lightning arrester.

Therefore, when the locomotive is inside the wireless network coverage area, the video from cameras is continuously uploaded to the video surveillance server. The wireless network controller ensures seamless roaming and stable video transmission when the locomotive is moving. When the locomotive leaves the network coverage area, video is saved on the flash memory card, and when it comes back video is automatically synchronized with the server using the EdgeStorage Sync function offered by ISS software.

### A network camera for the locomotive

According to the representative of Quorus AKS, MCSP already has an experience of using Axis IP cameras: product range of this company allows to provide solution to any kind of request .

Compact, dust and waterproof AXIS P3905-RE Network Cameras dedicated for severe operating conditions implying shocks, impacts and vibrations, extreme temperatures and lighting variation were selected for onboard installation.

Integration with other software and hardware solutions used in the project is confirmed by compatible usage of AXIS P3905-RE together with ISS SecurOS software and support PoE technology. Since the camera has a memory card slot it can be used for local data storage, while various videos and compression settings allow customizing the solution to match any customer requirements.

Currently the video surveillance system involving Axis IP cameras has successfully passed the trial operation period. As a result, MCSP management is planning to install this system for the other five locomotives.

