

IP video security for the Turda Durgau salt mine, powered by Axis Communications.

Professional surveillance, on the surface and underground.



Organization:
Salina Turda (Turda Durgau salt mine)

Location:
Cluj, Romania

Industry segment:
Tourism

Application:
Safety and security

Axis partner:
Green Security, Camstreamer

Mission

Today, Salina Turda is a salt mining museum that captures an important part of Transylvania's history. Salina Turda is one of the main tourist attractions in the Turda area, visited by an average of 600,000 tourists each year. Aware of the growing interest and motivated to expand the museum, the salt mine managers wanted to expand the existing analog video surveillance system, which was installed over five years ago. The expansion would allow employees and security personnel to efficiently monitor both the main public areas and the technical areas.

Solution

The technical solution, proposed by Green Security, proved the optimal choice for Salina Turda. 21 Axis network surveillance cameras were chosen for the task.

The superior performance of the Axis cameras allowed Salina Turda to ensure tourists' safety and efficiently monitor the essential technical areas. Two dome-type PTZ cameras were also deployed, covering a wide area of the Rudolf and Terezia mines.

Result

By using the Axis solution, Salina Turda achieved improved coverage of the public areas and an efficient way to identify potential technical issues (like monitoring equipment that powers the panoramic wheel). The fully scalable solution includes performance surveillance cameras, which provide clear images even in dim light conditions, video analytics functions, and offers multiple possibilities for later development.



The beginnings of salt mining in the Turda area are thought to date back to the 11th or 12th century and the first document officially mentioning a salt mine in Turda was issued by the Hungarian State Office on May 1, 1271. The salt mines in Durgău area have an interesting history behind, as they alternatively went from Hungarian to Austrian ownership.

Due to specific conditions in the salt mine, the solution implemented outdoor cameras, as they are resilient to temperature and humidity variations and are easily deployed in locations that are difficult to access. The cameras were equipped with superior IR capabilities, varifocal lenses with autofocus, and low demands in terms of bandwidth and storage capacity.

"Salina Turda quickly became one of Romania's main assets. It is a veritable history museum of salt mining and hundreds of thousands of people visit every year. Having this in mind, in terms of technical details, it was quite a challenging project that involved cutting edge products and technology; the security products used in the underground portions had to comply with strict technical requirements. Right now, we can say that Salina Turda has a state of the art surveillance system, Axis cameras provide live streaming and also provide the security staff with information about the health of the mechanical devices. It's an all-in-one solution," said Bogdan Gavril, Sales Engineer CEE, Axis Communications.

One of the most important salt mines in Transylvania, Salina Turda was closed down in 1932. The salt mine was forgotten for some time and was later used as an anti-aircraft shelter during WWII. Between 1950 and 1992, when the salt mine reopened as a tourist attraction for the general public, the first 500 yards of the Franz Josef transport gallery were used as a dairy warehouse. By 2008, the salt mine began a modernization and rehabilitation process as part of the PHARE 2005 CES program, and re-entered the tourist itineraries by January 2010.

Due to site expansions and an increase in visitors, the previous analogue surveillance system, installed in 2008, gradually became less able to cope with the salt mine's security needs. The Salina Turda development team began considering the need for improved picture quality and strong video analytics that offered motion detection, ability to spot missing objects, and warn of camera tampering attempts.

These features would allow security personnel to avoid hours of poring over video footage, as the network would identify events and point out exactly when events occurred. PoE technology was also mandatory for some areas of the salt mine. Salina Turda chose to deploy an IP solution from Axis Communications, mapped out with 21 different surveillance cameras preconfigured to monitor activities inside the public open spaces and technical areas used for everyday operations.

"When it comes to Axis Communications, one of our main strengths, besides the technical superiority, is our strong channel partner. Given the strategic nature of our partnerships, we always strive to ensure a 'win-win' approach. With every project, we demonstrate flexibility, visibility, and we assure that our goals are in line with our partner's focus. This was the case also with Salina Turda. Green Security is a partner that shares our vision and our key attributes - trust and respect. This created a positive customer experience that reflects both companies," said Marius Potorac, Key Account Manager Axis Communications

Of the 21 cameras installed, 19 were AXIS P1405-LE MkII cameras deployed with an aim to monitor essential public areas, including the children's playground, the elevator area, access points on the Bogatilor staircase, the lake, the Crivac area, and the balcony. Since these are the areas that attract the most visitors, security personnel needed to be able to spot theft attempts, monitor visitors and detect visitors who may be feeling ill as a result of the unique atmosphere of the salt mine. Salina Turda does not allow children under 3 years or persons over 65 years old in the salt mine, without the advice of a physician. Also, it is forbidden for persons that have asthma to enter the salt mine, due to possible complications. In light of these potentially serious health effects, live monitoring of the network camera footage was necessary to allow security staff to quickly identify any person that feels sick and automatically send medical staff.





The AXIS P1405-LE MkII cameras were chosen for their ability to provide quality images (30 fps for a 1080p resolution) under all light conditions. The cameras also support the Corridor Format function, have varifocal lenses and benefit from Zipstream and Autofocus technological advantages.

For the main areas, the Rudolf and Terezia mines, two AXIS P5635-E Mk II PTZ cameras were deployed. Due to their wide surveillance capabilities and their impressive 30x optical zoom, the cameras are ideal for the surveillance of large spaces such as these. In the Rudolf mine, the surveillance cameras are used to monitor every corner of the area, starting with the balconies, the panoramic wheel (which is considered the number one tourist destination in Romania), the sport area and the children's corner. In the Terezia mine, besides the ground surveillance, the Axis cameras also cover the lake and the pleasure boats.

The new surveillance system operates independently from the prior analog system, and is supported by a Dell T7810 server operating AXIS Camera Station recording software. The software allows the managers to access the live images even when they are not in the salt mine, through the AXIS Mobile Viewing app. The app offers easy access to multiple systems and other features such as live view and timeline visualisation of recorded events. AXIS Camera Station was chosen because of its ability to support HDTV image quality and its camera-based alarm triggers, such as motion detection and cross line detection – both of which feature optimization of bandwidth and storage efficiency.

In the future, the salt mine administrators plan to use the Axis cameras' capabilities to take headcounts of visitors in certain areas. The salt mine is naturally ventilated and can only support a limited number of individuals at a time. Together with video analysis software, the surveillance system will be able to provide timely alerts when the maximum levels of visitors is reached.

Live streaming

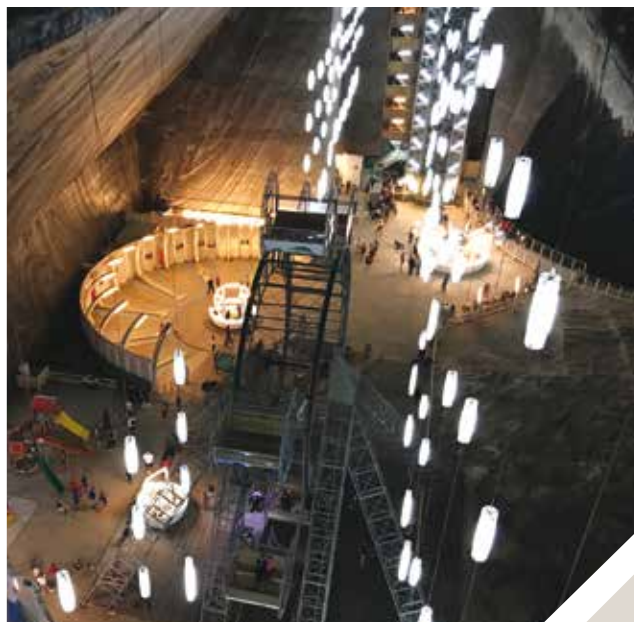
In order to be able to provide live images of the salt mine to those who are unable to visit the salt mine, an Axis camera was placed at a height of 70 meters. The camera will provide live stream video on Facebook and YouTube, by using the CamStreamer app. Developed by NetRex, the application allows users to create video streams on YouTube, or other platforms, and does not require an encoder or PC. The process is done directly through the hardware platform of the Axis camera. The technical solution extends the capability and the functionality of the IP Axis surveillance cameras. Camstreamer does not need a public IP address or particular firewall or router settings.

Conclusion

The Axis camera deployment is just the first stage in modernizing the surveillance system inside Salina Turda. Future plans include expanding the system to new areas, interconnecting it with other security/fire extinguishing systems, and live streaming broadcasts from inside the salt mine. Superior performance, reliability, and ease of deployment were some of the key features that convinced the Salina Turda management that Axis Communications was the ideal solution for them. Since the installation, the network capability of Axis cameras have helped the managers and security staff to respond in real time to events – such as a lost child, ill visitor, or a mechanical problem.

“Considering the importance of our visitors' safety and our wish to monitor certain mechanical systems, we chose a high-performing, easy to deploy IP video surveillance solution which offered unlimited expansion capabilities. We found in Axis a true technology partner, able to provide the performance and reliability levels we needed.”

Maria Simona Baciu, General Director of Salina Turda



About Axis Communications

Axis offers intelligent security solutions that enable a smarter, safer world. As the market leader in network video, Axis is driving the industry by continually launching innovative network products based on an open platform - delivering high value to customers through a global partner network. Axis has long-term relationships with partners and provides them with knowledge and ground-breaking network products in existing and new markets.

Axis has more than 2,700 dedicated employees in more than 50 countries around the world, supported by a global network of over 90,000 partners. Founded in 1984, Axis is a Sweden-based company listed on NASDAQ Stockholm under the ticker AXIS.

For more information about Axis, please visit our website www.axis.com.