

Forest Watch system with Axis cameras helps protect forests against fire.

Intelligent forest fire monitoring system for Nizhny Novgorod Forest Fire Safety Center enables efficient all-around panoramic surveillance.



Organization:
Nizhny Novgorod Forest
Fire Center

Location:
Russian Federation

Industry segment:
Government

Application:
Forest fire detection,
remote monitoring

Axis partner:
DiSiCon

Mission

Addressing a major forest fire challenge was the main goal for creating a Forest Watch intelligent monitoring system to ensure rapid early detection of fires in 33 regions of the Russian Federation. To meet this challenge, the DiSiCon team successfully developed a unique hardware and software system capable of utilizing the existing infrastructure, but they also encountered the need for functional and reliable cameras providing not only high image quality, but also offering a high level of reliability to withstand harsh environments.

Solution

Such a demanding application requires the use of high-quality AXIS Q60 Network Cameras which offer clear competitive advantages, including high reliability, ease of installation and great performance. AXIS Q6045-E offers an overview surveillance capability, and supports 20X optical zoom, and 12X digital zoom.

Another critical feature needed for such a specific application as forest monitoring, is that AXIS Q6045-E offers lens positioning accuracy 10 times better than that of its rivals (0.1° vs 1°), thus allowing determination of fire source coordinates more accurately. In addition, AXIS Q6045-E incorporates a CMOS detector with higher resolution (1920x1080, HDTV 1080p) and supports a specific night surveillance mode.

Result

The Forest Watch fire monitoring system incorporating intelligent Axis cameras received prizes and awards, and became the one and only Russian semifinalist of the prestigious Cisco Internet of Things Innovation Grand Challenge. In practice, the Forest Watch system today provides fire warning and monitoring capabilities for 33 regions of the Russian Federation, including reserves and national parks.

“Boosted with Axis IP cameras, our Forest Watch fire monitoring and surveillance system has become more efficient as operators are able to detect fire at an early stages. We have already achieved great cost savings and protected many hectares of forest in our area.”

Konurin Anton G., Deputy Director, Nizhny Novgorod Forest Fire Center.

More effective approach

As DiSiCon estimations show, the operational cost of the Forest Watch fire monitoring system is more than three times lower compared to traditional monitoring applications, providing a fast response that cannot be matched with any other ground surveillance technology. Higher positioning accuracy needed to accurately locate fire sources can be achieved by deploying additional surveillance points that are located on mobile communication towers, power lines and other high structures. In addition, the Forest Watch fire monitoring system offers such valuable features as automated surveillance and image processing. Therefore, a single operator can simultaneously operate dozens of cameras and monitor large areas without any risk of missing a fire incident.

Critical to Russian Federation economy

Every year due to forest fires, the Russian Federation bears significant losses reaching \$1.8 billion. Maintenance of a system capable of eliminating this problem costs only \$120 million. This clearly means that the Forest Watch fire monitoring system with Axis cameras helps government agencies save huge amounts of money and protect natural resources.

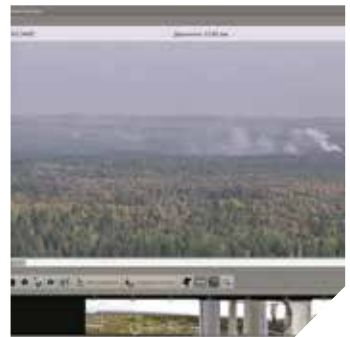
Unique cameras

Axis network cameras are ideally suited for such demanding applications as they can reliably operate even in harsh Russian winters down to -50°. Offering flexible configuration capabilities, Axis cameras can be easily adapted to decrease network bandwidth load, thus giving customers an opportunity to receive additional savings. Due to the fact that the wide vertical viewing angles lens can rise above the horizon, cameras can meet mandatory requirements for forest monitoring applications requiring camera calibration to ensure proper orientation in virtual space.

Monitoring as a service

Intelligent technologies allow access to monitoring services based on the Forest Watch fire monitoring system (SaaS model). Such an approach enables relevant agencies and departments to easily organize operator teams, monitor the effectiveness of their work, log fire sources and use integrated data – meteorological, satellite, GPS-data from mobile fleet, and many others.

In addition, system users can benefit from field support service, technical support over a single all-Russian free hot line and free training.



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