Araani's innovative video analytics are a breakthrough in fire detection and monitoring.

The use of intelligent cameras for fire protection offers numerous advantages.

Organization:
Araani

Location:
Kortrijk, Belgium

Industry segment:
Critical infrastructure

Application:
Fire and smoke detection

Axis partner:
Araani

Mission

Traditional smoke detectors are efficient, but do have a few downsides. For example, in some cases they are late in sounding the alarm because the smoke really has to penetrate into the detector. In addition, they are sometimes a little too sensitive, which easily leads to a false alarm, resulting in possibly unnecessary evacuation and a ton of confusion over nothing. For this reason, Araani started looking for a more reliable fire safety solution. The company first developed SmokeCatcher Certified and later supplemented its product portfolio with FlameCatcher Certified. Both products have been approved as fire detectors. Araani recently also launched Araani Fire Guard, a similar application that can easily be installed on a surveillance camera and also serves as a fire monitoring system. However, the Araani Fire Guard cannot replace a traditional fire detector.

Solution

Araani was the first to start using smart video analysis for smoke and flame detection. With SmokeCatcher Certified and FlameCatcher Certified, Araani opted to use an Axis network camera with Axis Lightfinder technology, which guarantees a high-quality image even in very low light. Both applications have CNPP as well as BOSEC certification and can therefore fully take over the role of the legally mandated fire alarms. The primary function of the camera then becomes fire detection by means of a link to the fire alarm center, with the image to support it.

Newcomer Araani Fire Guard can be installed on most Axis cameras as an additional check to supplement mandatory smoke detectors. The product is also useful in situations where fire detection is not mandatory, but the end user would still like to have efficient basic fire monitoring. It is not possible to link the Araani Fire Guard to the fire alarm center.

Result

Unlike a classic fire detector, the solutions provided by Araani do not have to establish physical contact with the fire, ensuring that potential danger is detected at a much earlier stage. In addition, the video images make it much easier to find the cause of a fire.

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Versatile applications in challenging conditions

The idea of using cameras for smoke and flame detection is both innovative and logical. It is a solution to the problems that any traditional fire detector faces. The first problem is the often challenging conditions in which a traditional detector has to operate.

Pieter Claerhout, CEO of Araani, explains: "Fire detectors are often affected by dust, humidity or toxic fumes, causing them to break down and frequently sounding false alarms, which in the end prompts employees to just turn off the detector. But even in historic buildings, it is sometimes technically and aesthetically not feasible to use traditional fire detection."

Maggy Baetens, Founder and CTO of Araani, adds: "A smoke alarm will only sound when smoke effectively reaches the sensor. Both SmokeCatcher Certified and FlameCatcher -Certified respond a lot faster. As a result, action can be taken minutes earlier, which is exactly the amount of time that can make the difference between the first smoldering flame and a rapidly spreading conflagration."

The response time is accelerated even more by the improved communication between the camera and the control center. People immediately know the exact location where the smoke or flames are detected instead of 'somewhere in the building', as is often the case with traditional fire detectors.

With the SmokeCatcher Certified and FlameCatcher Certified, Araani is focusing primarily on the niche market of what is known as 'critical business environments', such as in petrochemicals, the process industry or waste processing.

"We also see opportunities in other industrial environments or even in shopping malls and historic buildings," says Claerhout. "In high spaces, for example, where we face the challenge of stratification. In this case, the plume of smoke does not reach the smoke detectors on the ceiling, or reaches it too late, because the cold air cools the smoke and keeps it from rising to the detector."

Araani Fire Guard could be an interesting supplement to conventional fire detectors or in situations where fire detection is not mandatory. Examples include busy places in cities, in public transport, or at charging docks for electric vehicles, but there are also a wide range of uses possible in the industrial sector. The software can easily be added to most Axis cameras. The user receives an alarm signal as soon as smoke or flame appears. After that, the location of the fire is immediately indicated on the images. This enables immediate intervention. If the situation turns out to be harmless, an unnecessary evacuation or production stop can be avoided.

Finally, SmokeCatcher Certified, FlameCatcher Certified and/or Araani Fire Guard software can also provide a better view of who or what caused a fire. "Up to 50% of large fires are due to human error, but that is very difficult to determine using traditional smoke detectors. With an Axis camera, there is a much better chance of discovering the true cause of the fire," Claerhout emphasizes.

The perfect combination: Araani analytics and Axis cameras with Axis Lightfinder

For flawless detection of smoke or flames even in dark rooms or rooms with non-uniform lighting, the image quality of both SmokeCatcher Certified and FlameCatcher Certified cameras is crucial. "High-resolution images with sufficient light are key in ensuring that smoke and flames detected by our analytics software," says Baetens.

The light-sensitive cameras with Lightfinder technology can perceive colors in very low light and have very good noise reduction.

"We tested several cameras in different lighting conditions before developing our technology. The quality of the Axis cameras was by far the best option." Thanks to the Axis Lightfinder technology, both Smoke-Catcher Certified and FlameCatcher Certified have been approved as fire detectors from 5 lux and up.

Araani also has other reasons for choosing Axis, Claerhout adds: "Axis is a global leader in the IP camera market, so we are assured of the very best products and global availability. The Axis cameras also integrate well with external systems due to their open protocol. In addition, Axis has integrated intelligence into the camera, so we can run our software on the camera itself instead of on a server. That also benefits the reliability of the system." Finally, Claerhout also praises the extensive partner program offered by Axis: "Both from a technological and commercial perspective, they provide us with excellent support, and they are also always available for joint marketing campaigns."

In constant pursuit of improvement

Araani is constantly improving the algorithms in the SmokeCatcher, FlameCatcher and Araani Fire Guard software to make fire detection even more powerful and robust. Baetens: "Axis is always developing better, more light-sensitive cameras, allowing us to operate in lower-light conditions, which is an important evolution. In addition, we have also been working on developments of AI applications related to fire for quite some time. Axis is once again a pioneer in the market here by providing cameras that support deep learning on the camera itself!"

For more information: www.araani.com

www.youtube.com/watch?v=Caz-poD9XyBk

About Axis Communications

Axis enables a smarter and safer world by creating network solutions that provide insights for improving security and new ways of doing business. As the industry leader in network video, Axis offers products and services for video surveillance and analytics, access control, intercom and audio systems. Axis has more than 3,800 dedicated employees in over 50 countries and collaborates with partners worldwide to deliver customer solutions. Axis was founded in 1984 and has its headquarters in Lund, Sweden.

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