

EU Success Stories



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today and tomorrow.

HIKVISION
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About Hikvision

Hikvision is a world leading provider of security products and solutions. Featuring an extensive and highly skilled R&D workforce, Hikvision manufactures a full suite of comprehensive products and solutions for a broad range of vertical markets. In addition to the security industry, Hikvision extends its reach to smart home tech, industrial automation, and automotive electronics industries to achieve its long-term vision.

Hikvision products also provide powerful business intelligence for end users, which can enable more efficient operations and greater commercial success. Committed to the utmost quality and safety of its products, Hikvision encourages partners to take advantage of the many cybersecurity resources Hikvision offers, including the Hikvision Cybersecurity Center.

Core technologies

Hikvision's significant R&D investment has led to notable advances in audio and video encoding, video image processing, and data storage. The company is also one of the global leaders in forward-looking technologies such as cloud computing, big data, and Deep Learning.



Imaging

Picture quality is central to a successful video security system, and Hikvision cameras offer high definition images. Images may also lose color and critical details in dim light. For this, Hikvision offers cameras that see clearly in color what others can only see in black and white, thanks to its innovative DarkFighter and ColorVu technologies.



Big Data intellect

Big data intelligence accomplishes deep cognition and discovery through the management of cross-platform data and data mining, all fueled by machine learning and graph computing. Big data can further draw out the value of large amounts of information and provide analytics-based support to upper-level applications.



Streaming media network and control

Hikvision's network control overcomes pathway limitations in equipment, alleviates pressure on the front-end, reduces broadband access network bandwidth, and isolates internal and external network equipment.



Embedded system development

Centered on applications and built on computer technology, this system features stable performance and is easy to maintain, ensuring reliable, long-term operation.



Cross-media perception and reasoning

Cross-media perception, analysis, mining, reasoning, development, and other applications, along with the construction of analysis and reasoning engines, are made possible through multi-dimensional perception using visual, audio, text, and laser radar.



Audio and video data storage

Hikvision's network control overcomes unique hard drive pre-partitions, hard drive failure warnings, and S.M.A.R.T. technology all effectively reduce hard drive fragmentation. These features also strengthen the protection of critical information, and are better adapted for video surveillance.



Visual perception

Based on a deep understanding of visual information, the behaviors of people, vehicles, or objects in videos can now be perceived accurately. Applications for this technology range across vertical markets and into a wealth of critical scenarios.



Video codec

The proprietary S.M.A.R.T. encoding technology can reduce the amount of redundant and non-sensitive video information recorded, improving the compression rate while guaranteeing equal video quality.

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01. Safe City and Traffic

The Hikvision Safe City and Traffic Solutions provide sound, stable, and reliable security. They feature a series of advanced technologies and various security subsystems to safeguard industries, centralize operations, and integrate security platforms.

Securing beauty without ruining the view

Location: *Balatonfüred, Hungary*

With the seasonal inflow of a large amount of visitors, and revenue, popular resort cities need to make sure everyone has a great holiday, without being touched by crime. Balatonfüred, Hungary's second most popular resort has over 1.5 million visitors (in 2016) flocking to its lake – the biggest in the country. The local police station looked to reseller WBS Systemhouse to provide a holistic surveillance solution for the city, and this was achieved by using Hikvision equipment.

Challenge

The whole area of the city needed to be covered, from the city centre to the border of the city covering the roads leading into the city and main traffic junctions, such as train and bus stations, locations preferred by tourists, walkways, entrances of beaches and bigger traffic junctions of the city. The city's administration specifically needed to reduce the incidents of pickpocketing, shoplifting, car theft and breaking and entering.

Cameras needed to be positioned for maximum coverage, but they also needed to be placed sympathetically, to minimize any impact on the views and the beauty of the city – the reason for visitors to be there!

A particular challenge was the city's railway station. Cameras were needed in the station lobby to ensure safety of passengers. However, the lobby was under renovation at the time, which complicated the installation. The cameras had to be fixed in a cavity covered with a suspended ceiling in a way that the casing was not affected.

The police department also needed to have a way to monitor vehicles to add to the security of the city and the safety of both residents and visitors.

Solution

WBS Systemhouse used 40 cameras around the city in strategic locations to offer maximum coverage. They chose PTZ Dome cameras (DS-2DE4220IW-DE) for their small, compact size, optimal resolution and zoom range. This meant it could provide the best pictures and range, while being unobtrusive to not spoil the beauty of the city.

The complicated installation in the station building was solved using a bracket (DS-1662ZJ) with a custom adjustment. The customer's request was to ensure the camera's mounting mechanism and the cabling was as 'invisible' as possible. This bespoke installation and the ability of the camera to deliver long range PoE power, resolved this issue to the delight of the customer.



The cameras are connected by a "closed-loop" wireless or optical fiber connection to the recording and Hikvision's HikCentral video management platform installed in the server room of Balatonfüred Police Station. Camera images are recorded by 2 NVRs and a DVR, and the functions of the video management system are provided by iVMS 5200 (now called HikCentral) installed on a separate server. The WBS ANPR System installed on a separate server is also responsible for processing license plate data to check when vehicles entered and left the city, but also to have alarms on any 'blacklisted' vehicles that are picked up.

The feeds are monitored 24h at the police station in Balatonfüred, who are able to react quickly if necessary. The users find the system easy to use and flexible, thanks to the HikCentral and the fact that the cameras can easily be moved remotely.

László Regdon, Chief of Police in Balatonfüred, says: *"The area surveillance system has greatly contributed to the success of several traffic actions and criminal investigations by the police. Based on the system - which provides needle-sharp images - we have obtained useful*

information to provide evidence for various violations. Since the introduction of the camera system, the number of crimes has been reduced and the quality of events has been improved. The cameras in Balatonfüred fit into the atmosphere and environment of our small city, they do not create dissonance at all."

This is a great example of how surveillance products can combine together to give an efficient, holistic system to cover a whole city. And, due to the choice of cameras, the quality of picture and the dedication of the installers, the solution quietly monitors the city and the people enjoying it without ruining the impact of the environment that attracts so many to it.

Improving city life

Location: *Mennecy, France*

Cities all over the world are looking at ways to reduce and manage crime levels. One such city, Mennecy, turned to installer Ibson for a solution, who then installed Hikvision cameras and equipment

Challenge

The city of Mennecy lies to the south-east of Paris, in the Essonne department of France. It has a population of around 14,500, and its Mayor – Jean-Phillipe Dugoin-Clément – wanted to take steps to make his city safer, both for these residents and visitors.

They had already identified areas where crime was more likely to happen and needed to make these more secure. They also wanted to make local festivals more secure.

With new measures to monitor these issues, the aim was to detect any suspicious behavior and allow these incidents to be flagged with the Police department, who could then intervene.

Although, of course, these measures could help combat more serious crime like assaults, they were also instrumental in reducing 'community crimes' like urinating in public.

Solution

The installation team put in 78 cameras around areas that they see as strategic – schools, shopping malls and train stations. They chose Network IR Speed Dome (DS-2DF8836) in the Smart IP series because these cameras give very good quality images both day and night, using DarkFighter technology to 0.002 lux.

They also put ANPR (DS-2CD4626FWD-IZH/P, DS-2CD4A26FWD-IZH/P) cameras on major roads to curb speeding, using new AI innovation to improve the system. This meant that the city could process speeding tickets, and essentially led to a reduction in speeding on those main roads.

Finally, the solution was brought together and managed using iVMS 4200 and a video wall in the city monitoring center.

The results were impressive. They saw a drop in incidents in the areas where the cameras were installed. In those places, delinquency was reduced or even removed altogether.



The images from the cameras make the job of the Police easier to do - also providing them with good quality images if they need to put together a case.

Dominique Ancher, Director of Ibson, says: *"The return on investment was excellent. The city saw fewer complaints, and we see that people were much more relaxed and happier because of the drop in crime rates, but also because of the peace of mind that the cameras give."*

The City of Mennecy plans to ramp up the coverage through the city, installing 200 cameras within five years. This is the first stage of a plan to set up a new urban supervisory center to establish live management of camera streams throughout the city, providing a crucial resource for the Police and other organizations. They will be able to do this using Hikvision technologies, like DarkFighter X and Rapid Focus.

Securing a whole city is a massive undertaking, but it's clear that by tackling the key areas which have typically higher crime rates, a surveillance solution can do wonders for the local feel good factor..

Streamlined parking in Germany

Location: *Hamburg, Germany*

Parking is one of the modern day headaches of city dwellers and commuters alike. Finding a space can take a long time, and this is especially frustrating when you are trying to start your working day. When Otto, one of the world's largest e-commerce companies, wanted a technological answer to this problem, they turned to innovative security solutions provider Videte IT project. Videte IT delivered it's Smart&Safe solution using Hikvision products.

Challenge

Otto was adding two new buildings at its group HQ in Hamburg, Germany, which included a car park facility. From the beginning, management wanted a car parking solution that made parking simple, efficient and safe for employees. Drivers often go into a car park and drive round endlessly trying to find a space. This wastes valuable employee time and frustrates them, all adding up to a bad experience.

Otto also needed the solution to be easy to manage, being easy to operate, seamless to integrate into the existing security system and accurately monitor parking for management purposes. This required intelligent detection and analysis to provide improved traffic flow and parking space information (utilization rate) immediately.

Another requirement asked for the implementation of a mobile app, so that employees could plan their arrival beforehand.

Of course, as with most new structures, there was also a need for security that linked seamlessly into the existing systems.

Solution

A Hikvision indoor parking guidance system was installed as part of the project build. The system detects all available parking spaces using parking cameras (DS- TCP345D) installed throughout the structure. Each camera can see six spaces in the car park and so they can see if there is a vehicle in each one. This information is sent to a guidance terminal, which will calculate how many parking lots are occupied and available. The terminal will also send this data to a Deep Learning analysis server (DS-TPS100), which in turn, updates the parking guidance screens. This means drivers can easily find an available spot.

Drivers can see clear signposting when they enter to take them immediately to the next available space, using parking guidance display indicators (DS-TVL121) throughout the car park. The analysis server provides the information



about how many parking spaces are to the entrance parking guidance terminal (DS-TPM400-P). The parking guidance terminal also allowed colored lights showing parking status – red for occupied and green for available. This can also be configured, with seven colors available to allow different status indications – for example VIP parking space, electronic car space and disabled space. This terminal also had a built-in switch function to provide power to the 32 cameras, making installation easier.

The Deep Learning analysis server improves parking lot efficiency by combining all of this information, which provides a valuable resource for management. It works to analyze vehicles to improve parking space detection accuracy.

The system can also support multiple reports for easier management, such as: hourly, daily, monthly, annual reports to show which time is the busiest or shows as full. It can also show usage of the car park and average parking time.

Last, but not least, the cameras also provided surveillance, securing the car park as well and streamlining it.

Timo Koch, Videte IT's Head of Technology and Pre-sales, and Tobias Bauer, Videte IT's General Manager, say: *"We built a parking system that made parking management so much easier around AI technology using Hikvision products. These provided a higher detection accuracy rate than other, and make the solution scalable for the future."*

With the help of Hikvision and Videte IT, this car park removes one of the modern headaches for Otto employees, streamlining the hunt for a space. The AI solution also provides vital information to the management team – effectively delivering a win-win scenario.

Keeping many eyes on traffic in Poland

Location: *Chorzow, Poland*

With traffic levels constantly rising, cities around the world are looking for ways to manage the sheer number of traffic on their roads. The city of Chorzow in southern Poland wanted to go a step further and provide information to streamline their public transport on the roads, as well as regular vehicles. They approached Sprint, a leading systems integrator in Poland, who delivered an intelligent traffic management solution using Hikvision technology.

Challenge

City municipal Board of Streets and Bridges in Chorzów (MZUiM – Miejski Zarząd Ulic i Mostów) an organizational unit of the city is responsible for the management of public roads in Chorzów. The Road Engineering Department within MZUiM is responsible for the city's Traffic Management System.

The department had an extensive 'shopping list' of requirements for this complex system to truly meet its needs.

Firstly, they needed to be able to recognize number plates efficiently, even at high speeds of up to 250 km/h. Further the system needed to be able to classify the vehicles.

Secondly, the cameras used needed to have a high image quality and also to have some aesthetic quality, as they would be mounted all over the city, sometimes in prominent places. The ability of the cameras to maintain a high image quality in low light conditions, and to offer image stabilization were also important for this project.

The system needed to effectively monitor traffic on major roads and intersections throughout the city. It would be used for a variety of activities – from verifying accidents to tracking truck routes.

But perhaps the highest priority for the solution was to create a traffic light management system in the city, taking into account relevant data submitted to the Traffic Control Center. With this, the MZUiM could optimize signalling work and create priority for public transport vehicles.

Solution

Chorzów's Traffic Management System using Hikvision ANPR intelligent cameras other supporting CCTV was installed by Sprint in 2019.

The system used the DarkFighter Network Speed Dome PTZ camera (DS-2DF6A236X-AEL) in key areas. This camera has high sensitivity in low light levels, image stabilization and rapid focus, making it ideal for the position. They also used 4-Directional Multi-sensor Network PanoVu cameras (DS-2CD6D24FWD) at key



intersections, to capture all the access roads to the intersection. These also come with lower infrastructure costs, since they combine four cameras into one. They also look pretty good!

Footage from the cameras was recorded using 5 4K NVRs (DS-9632NI-I16) and it was all brought together using the HikCentral client-server system platform.

But perhaps the real hero in the system was the ANPR technology. ANPR data from the ANPR Checkpoint Capture Unit (IDS-TCV300) provided key data to meet the project's needs. This included recognition of registration numbers up to a speed of 250 km/h, ADR number recognition, and vehicle classification. The system was also designed to integrate the information transmitted from induction loops on the roads.

Lukasz Cysewski, Project Manager at Sprint, says: *"Hikvision's solutions in the field of intelligent ANPR cameras and CCTV best corresponded to the project requirements. Specifically, we were impressed with the scope of implemented functions and effectiveness of the ANPR cameras, image quality and overall management*

of the CCTV system. Hikvision also offered a high level of support to integrate the smart cameras with our intelligent management software."

The system gave Chorzów the ability to monitor their traffic in one place. This brought a raft of benefits, like automatic detection of offenses such as parking in an unauthorized place, and allowing the department to prioritize public transport and emergency vehicles for a quicker journey. It also allowed Police to track suspicious vehicles, with integration into their Smart City platform.





Retail

02. Retail

The Smart Retail Solution from Hikvision is a surveillance package that effectively enhances much more than just security – it adds economic efficiency and productivity as well.

Using cameras to map retail trends

Location: *Warsaw, Poland*

With the seasonal inflow of a large amount of visitors, and revenue, The retail industry is constantly looking to find new ways to be relevant in the ever-increasing shadow of online shopping. Researchers have predicted a 17.5 percent growth in the ecommerce share of global retail sales in 2021, rising from 13.7% in 2019. When designer brand Miniso opened new shops in Poland, they used Hikvision technology to give them the edge.

Challenge

The management team at Miniso had a number of specific questions they needed answers to in order to make the stores successful in the cut-throat high street environment.

How do we know if our marketing strategy is working? What is the conversion rate of purchases? What are the 'hot areas' of the store, and do these actually represent best-selling products? Originally, with no access to significant information, they relied on experience and conversation with staff. But there was no way to verify these findings.

They also needed to be able to get this information remotely – i.e. management in their HQ in Warsaw wanted to be able to see the situation in the other four stores without having to visit them separately. Sometimes, they resorted to sending people to individual stores to manually count the people – a very time-consuming and costly exercise.

Solution

Miniso turned to Hikvision AI products, with a solution built by Polish reseller Volta, including people counting cameras, fisheye cameras and NVRs. These were all coordinated using the HikCentral software platform.

A people counting camera in each store counts people passing by, while another counts people entering and leaving. With this tailor-made solution management could calculate how many people were passing by to see a purchasing conversion rate. This also helps them to know whether marketing strategy is working. They can analyse the information further to see whether the rate of people entering the store is dropping, and whether that relates to the number of those passing outside. Miniso's management can then look into the causes of these numbers, along with sales figures, to form a picture. For example, whether there is an external factor affecting shoppers either to pass by, or to enter.

Because Miniso have the same technology set up in all the stores in Poland, they can compare



different locations. This also comes in useful when it's time to negotiate rent with shopping malls.

Using ceiling installation of several fisheye cameras, the system can generate heat maps. This helps managers to see where 'hot areas' are, helping them to allocate products in the optimal place for promotion. Hot areas can also be compared with sales figures to provide further insights into shopping patterns.

All the information provided by the system is coordinated, and business information on both layout and original image can be overlaid in Miniso's HQ in Warsaw. The professional video management platform allows managers to access the information from different offices and mobile applications anywhere. This makes life a lot easier for the operations team as they need to check the situation in all stores. It also means that everything can be viewed simultaneously, so they can identify trends throughout the network of stores.

Byron Zeng, Vice President of Miniso Poland, says:

"The high accuracy of conversion rate the solutions provides really solves a number of our management issues. We can now easily see what's going on in the other stores, including heat mapping, which makes management of the whole networks so much more efficient."

This is a great example of how AI surveillance products can change the landscape of business decision-making. In a fiercely competitive environment, like a shopping mall or high street, shopping trend data can help a retailer to survive. In fact, this worked so well for Miniso, they decided to use the solution in their stores across the whole of Europe – potentially about 200 stores in the next year.

Securing tradition with innovation

Location: *Reykjavik, Iceland*

Jeweller Michelsen is among the oldest companies in Iceland, selling luxury jewellery and watches. In fact, the company is also an official Rolex Service Center. The family business recently moved premises to the center of Reykjavik, and needed to upgrade their security as part of the refurbishment. This was also important, since they added a new range of expensive watches to their inventory. They turned to Securitas, Iceland's largest security provider, who furnished them with a solution using Hikvision products.

Challenge

As a high-end retailer, the store has to contend with quite sophisticated criminal activities. For example, one trick is to go into the store and try on a ring, bringing a counterfeit ring in their pocket. They make a switch and hand the counterfeit back to the employee. These kinds of cases can take time to be discovered. There are also criminals visiting the store weeks in advance to study the layout and security system, trying to find blind spots. This is why it's useful to have a recording to show the police to help any investigation.

To fight these attempts, Michelsen needed complete protection for the new location, which is roughly 140m². This needed to include both indoor and outdoor cameras. However, the store shape posed a challenge - an L-shape, with the entrance on the corner facing the reception desk, with Rolex products displayed to the left, the workshop in the middle (behind the reception desk) and other items displayed on the right as you come in.

They needed a security door, alarm system, smoke and flash light mounted to the ceiling, emergency buttons located around the premises and cameras that covered the whole store. They also needed to have a comprehensive recording storage that could be viewed on mobile phones and live on monitors.

Solution

Securitas brought in a team of specialists to analyze the premises. Their solution was to mount cameras around the entire layout of the unusually shaped space for a comprehensive coverage of every area and also included outdoor cameras.

4MP DarkFighter Varifocal Dome cameras (DS-2CD5146G0-IZS), were installed inside to get the best possible images of fast-moving targets in lowlight conditions. The model's excellent overall image quality in all light conditions made them perfect for this job. They meant that any criminals attempting a 'smash and grab' at speed could be captured, even if the heist was attempted at night.



For outside, 4K Moto Varifocal Bullet cameras (DS-2CD5A85G0-IZS) were chosen for their high overall image quality.

A Pro Series 8-Slot Workstation for Windows (DS-WSPWI-T8) completed the solution. This offers excellent value when long retention times are required. It meant that recording could be retrieved for potential investigation up to eight weeks after the incident.

All of the information is managed centrally by Securitas's Reykjavik HQ, which handles the security remotely 24/7.

Frank Ú. Michelsen, owner and CEO of Michelsen, says: *"We were really impressed that the solution fulfilled our specific needs. For example, it included custom made ceiling brackets for our ceiling which is almost five meters high. This caused a lot of thought while installing the cameras and other security equipment, but they found the right solution. We are thrilled with the results which give us great peace of mind."*

Even though Michelsen's is a traditional business, the application of innovative

technology has helped to secure it for the future. Now the company is equipped to deter and investigate any thieves, protecting their goods so they can delight their customers for years to come.

Facilitating safe food shopping

Location: *Nationwide, The Netherlands*

Businesses have had to adapt to new regulations to remain operational in pandemic times. This is particularly relevant to essential providers like supermarkets, and who often have government-imposed safety directions to follow. Dutch franchisee Leussink Retail Groep operates 7 Jumbo supermarkets in its portfolio. They tackled the thorny issue of hygiene and social distancing with a solution made up of Hikvision cameras, SmartPole sanitizing stations and the SmartPole platform for safe shopping.

Challenge

Governments are imposing safety requirements and food retailers are at the forefront being one of the essential sectors during the pandemic. They focus on providing a safe environment in order to make safe grocery shopping available to people.

Regulations require active crowd management within the stores, as a way to reduce the risk of cross-infection. Originally, this was done by restricting the amount of shopping carts in circulation and/or posting staff members at each shop entry. This proves to be very costly, with stores open a large part of the day, 7 days a week.

Customers are required to disinfect both their hands and shopping trolleys. They need to be able to do this effectively using a friendly sanitization method.

Social distancing guidelines are often required to be strongly upheld in retail outlets. The daily amount of customers in Leussinks grocery stores

range from hundreds to thousands, depending on the size, so crowd management was difficult. They looked for ways of managing the number of people in their stores at any one time to facilitate this.

In addition to complying with Government rules, they also wanted to provide peace of mind and a safe shopping experience to their customers.

Solution

SmartPole Solutions, a Dutch member of Hikvision's Technology Partner Program, stepped up to the plate, delivering a comprehensive solution based on Hikvision Dual Lens People Counting Network Cameras (DS-2CD6825G0/C-IS), their SmartPole Sanitizers and LeftClick software.

SmartPole's high end sanitizing stations were installed at store entrances. These sanitizers provide shop visitors a spray dispenser to disinfect their hands and a tissue dispenser to clean their shopping trolleys and scanners before they enter the store.



On top of that, the sanitizers carry large screens with narrowcasting capabilities providing owners to publish all sorts of content like shop hygiene protocols and discounted products.

The output from the Hikvision people counting solution is displayed on the SmartPole screens. Essentially, SmartPole's software platform is able to capture the people count store captured by the cameras and display it on screen, using the LeftClick software.

The narrowcasting software publishes clear and friendly messages for the shop visitors providing them with insight on the crowd levels in the store. When this percentage approaches the maximum crowd, the screen displays a friendly warning. Grocery shoppers can also see when the number goes down, making it safe for them to enter.

The solution operates based on a calculation that no more than a certain number should be in a shop, depending on its size. This means that there are few enough people inside to make social distancing possible. In this way, everyone can shop for their essentials more safely.

The full solution is managed using Hik-ProConnect software integrated with the LeftClick software on the SmartPole platform.

Tijn Leussink, owner of Leussink Retail Groep, says: *"We were impressed by the high-quality, integrated solution. We were under pressure from the government to provide a safer shopping environment and with SmartPole we have succeeded well".*

Thanks to this partnership, shoppers at Jumbo feel safe when they shop for their groceries. People counting data can also provide valuable insights for retailers to help them improve their business. This is something that the team at Leussink can consider for the future.

Fast food stores get rapid install of new CCTV system, UK

Location: *Glasgow, United Kingdom*

Sandwich shop franchisee Nabeed Ramzan operates four fast-food stores in Scotland, located in Glasgow, Motherwell, and Stenhousemuir. Recognising the need to upgrade the dated analogue CCTV surveillance systems at each of the stores and monitor them centrally, Ramzan approached integrator 1080 Solutions Ltd., which undertook a comprehensive site survey and recommended the installation of a powerful new system from Hikvision.

Challenge

With aging technology in the existing discrete CCTV surveillance solutions in each of the branches involved in the project, the time was certainly ripe to investigate the advantages an upgrade to a centrally monitored digital IP system could provide. It would need the team of engineers to decommission the old CCTV system and install its replacement during peak business hours. The upgrade also called for the replacement of all the existing cabling with BT grade Cat-6 infrastructure to allow on-site NVRs to relay signals directly to the main office.

The new system was required to function as both a replacement to the previous solution and a future-proof upgrade, capable of assimilating further upgrades in the form of additional cameras or NVRs if desired. Not only that, but wherever possible the new Hikvision solution should take full advantage of the existing wall and ceiling mounts used by the previous CCTV cameras to minimize disruption and the need for redecoration. This meant careful consideration of which cameras to place in order to maximise coverage and efficiency.

Solution

The site survey had identified the key areas for surveillance and highlighted camera technology that would be especially useful. The areas behind and in front of the serving counters, especially the area surrounding any cash register, were mandated to receive the highest level of surveillance to detect theft and/or mishandling of food or beverages by both staff and customers, and vandalism. Even during the site survey, it was clear that the Smart Hikvision network dome cameras, with their IR sensors, Smart Line Detection, Region of Interest selection, and Entering and Loitering Detection technologies, would play an important role.

1080 Solutions' newly installed CCTV surveillance solution functions as both a replacement to the previous solution and a future-proof upgrade, capable of assimilating further upgrades in the form of additional cameras or NVRs. It consists of forty Hikvision 4 MP vandal-resistant network dome cameras to monitor interiors, with the external areas at all the stores covered by ten 4 MP bullet cameras. . Five 4K 16 channel NVRs,



capable of storing up to 24 terabytes of footage from the cameras, lie at the heart of the CCTV system and offer the possibility of easily adding a further 30 cameras to the 50-camera system. The store NVRs also relay information to a dedicated workstation and 47-inch monitor at head office running Hikvision's video management software. As a result, the security team can now monitor activity in real-time across all the stores, with instant playback across a wide range of devices, from a desktop to a tablet or smartphone. All cameras also use Power-over-Ethernet technology, in order to maximize efficiency and ease of installation.

The internal dome cameras benefit not only from a high-performance 30m IR range for crystal-clear night time surveillance but also from their Smart Feature set, specifically Line Crossing and Intrusion Detection. Used together they enable the triggering of an alarm on the detection of the crossing of a virtual line, and upon entering and loitering in a pre-defined virtual region. This helps to alert the security team to possible incidents and allows them to investigate either at the time or for evidential purposes later.

Providing external CCTV coverage across all four branches involved in the project is Hikvision's 4 MP Wide Dynamic Range Mini Bullet Network Camera. Like the internal dome cameras, these units benefit from a 30m IR range and an extensive Smart Features like Motion detection, Dynamic analysis, Tampering alarm, and Storage Exception. The Dynamic analysis feature in particular enables Ramzan's security team to actively anticipate potential incidents, thereby allowing them to stand by in preparation for any incidents to occur.

"We are extremely satisfied with the new CCTV surveillance solution from Hikvision UK," Nabeed Ramzan says. "The combination of the high-performance images from the internal and external cameras alongside the quality of the installation is very impressive. What's more, the Hikvision NVRs allow us to make further enhancements to the solution quickly and easily if desired."





03.

Transportation

Hikvision's Smart Transportation Solution provides powerful, comprehensive surveillance for every vehicular security need. High-definition video monitoring helps authorities deal with situations such as pickpocketing, traffic accidents, terrorism, disorderly behavior of passengers and drivers, and more.

Extreme weather surveillance to secure transport

Location: *Reykjavik, Iceland*

When you're securing premises in Iceland, you need a reliable system that can cope with both plummeting temperatures and low-light levels. Hikvision cameras were used in such a solution – chosen by Securitas Iceland to secure a harbour for customer Samskip in Reykjavik.

Challenge

Global logistics company Samskip is one of the larger transport companies in Europe with offices in 24 countries in Europe, North and South America, Asia and Australia. They operate an extensive network of container services to and from Iceland, along with refrigerated cargo logistics and international forwarding around the world. One of their locations is a harbour in Reykjavik, which includes warehouses.

Operating in sub-zero temperatures and with low-light even in daytime for some of the year, Samskip needs a special kind of surveillance system.

When temperatures are as low as -30°C, electronics can become unresponsive, or stop working completely. These are also the temperatures where maintenance is more challenging – these are not ideal environments for technicians to be working outside. The biggest snow depth ever recorded in Iceland was 279cm in North Iceland in March 1995, for example. Although this was the worst winter

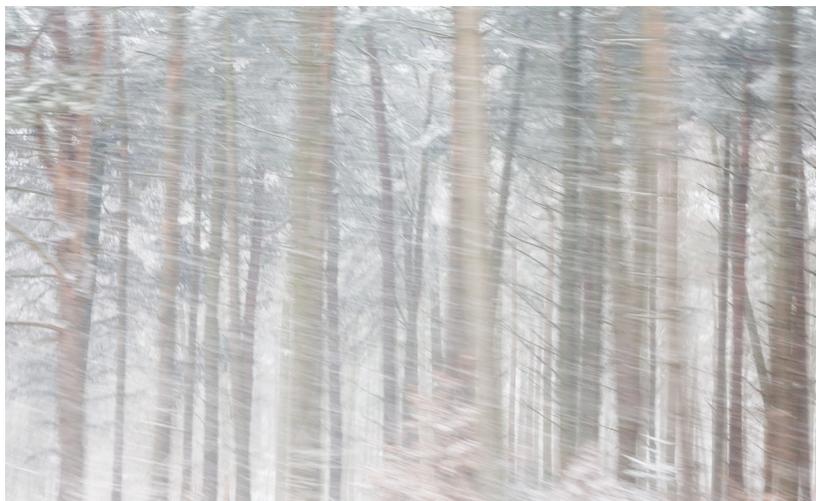
ever recorded, it gives an idea of the potential extremes. There are also snow storms and the high wind chill factor to contend with.

Low light in the winter months means that solutions in Iceland need to be better able to provide clear images in failing light. During winter, Iceland's high latitude means shorter days - the longest day in the middle of December has only 5 hours of light, for example, with the sunrise at around 11am and sunset between 3 and 4pm.

Despite these unique conditions, Samskip needed to have a good overview over all that is happening around the harbour complex, both inside and outside. Specifically, they needed to be able to trace products and goods in the warehouse.

Solution

Iceland's leading security provider, Securitas, rose to the challenge, providing a solution using more than 150 Hikvision products, including PanoVu and DarkFighter® cameras. All these cameras can operate to a temperature of -30°C.



The PanoVu cameras provide excellent wide angle surveillance to cover as much of the area as possible.

DarkFighter technology is a popular choice in Iceland because it gives clear, useful images even in the lowest of light scenarios. The smart function on the cameras means that operators are able to identify potential issues by analyzing people's behavior. They can also trace a product between locations and see its condition at receipt and delivery, enhancing both security and business efficiency.

To complement the Hikvision solutions, Securitas chose Seagate as their preferred storage vendor with their Skyhawk. The solution included Seagate's high-stability Skyhawk drives, especially developed for surveillance applications. Skyhawk surveillance drives are equipped with enhanced ImagePerfect™ firmware to deliver ultimate reliability and zero dropped frames, and SkyHawk Health Management, a software designed for prevention, intervention and recovery. Bergvin Þórðarson, Samskip's

Security Manager, says: *"The cameras meet the requirements for analysis of people and merchandise. We are confident with both Hikvision and Securitas – in both their product and people. We know that they will fix any issues and react quickly if there's a problem."*

Securing large areas can be a challenge all on its own, but the addition of potentially crippling weather conditions means a security solution needs to be robust. Hikvision cameras were up to the challenge and provided reliable security for the entire operation.

Upgraded perimeter detection for car dealership

Location: *Kolding, Denmark*

Car theft is a concern for many people, so imagine if you were responsible for a whole load of them. Car dealer P. Christensen in Denmark knows this headache from personal experience, suffering a number of thefts from their fenced area. It was time to ramp up security, so they turned to Telesikring, the largest private-owned security company in Denmark, for a perimeter detection solution. Telesikring upgraded security with a solution using Hikvision surveillance cameras.

Challenge

Despite existing security measures like electric fences and burglar alarms, the car dealership was still experiencing thefts. Thieves were managing to come up with increasingly imaginative ways to beat the system – like crawling over fences and even digging underneath them.

They stole all sorts of items, including wheels and catalysts from the cars and vans exhibited at the site. These represent quite some value, and the cost of these losses was mounting up.

They needed a solution which could work for them in all sorts of weather conditions and in the dead of night – the most vulnerable time. The premises have some quite remote outlying areas, which were also particularly at risk.

Solution

The car dealership is now monitored using a perimeter detection solution made up of both conventional and thermal cameras.

These cameras are connected to a Milestone VMS with analysis software. In turn, this has a direct connection to the Jutland Control Center, a local Alarm Receiving Center that monitors the property 24/7. Now it's not possible to enter the property outside of opening hours – day or night, without this being registered by the control center. The information they receive from the analysis software enables them to make an informed decision on their response, for example sending a guard patrol.

Thermal cameras were chosen because of the reliability in all weather conditions. This solution specifically used the Thermal Network Bullet Camera (DS-2TD2136-10). Once the thermal camera detects a break-in, it sends an alarm to the ARC and the operator there can use the low-light clarity delivered by the DarkFighter cameras (DS-2CD4B26FWD-IZS) also present to verify the alarm. These camera provide excellent images even in the lowest of light levels, making the ideal for remote verification.



Henrik Finn Sanderlund, Quality Manager at P. Christensen, says: *"Yes, we are very satisfied! Since the deployment of the system, this has effectively prevented burglary and theft. The solution was deployed on a Thursday and on Friday the solution caught the first break in, effectively preventing it."*

Managers at P. Christensen can now rest at night, safe in the knowledge that security innovation is keeping an eye on the property.

Checking cars in and out simplified for Filippi Auto

Location: *Bastia, France*

When a business has a number of sites operating in different locations one of the challenges is to bring the security function together all in one place. Filippi Auto, the leading car rental company, sought out a solution from reseller Vedetec for a solution in its Corsica operation, and they used Hikvision products to do it.

Challenge

The main objective of this installation was to be able to monitor the entrances and exits of vehicles of five sites from the main site in Bastia as if there was only one car park. The existing situation provided quite a headache for managers, since they couldn't get an overview of what was happening at each site.

With customers returning cars to all five sites, it can be tricky to keep an eye on all of them without a lot of manpower. For example, one customer picked up a car from the Bastia site and returned it to another site 130km away. Unfortunately there was no one at that site to check the vehicle condition. Later, scratches were found on the vehicle but there was no evidence as to which customer was at fault. In the end, Filippi Auto had to hire an extra employee on site specifically to check the condition of returning vehicles. This, of course, influenced the running of the business, not least because it added to operational costs in manpower and lost repair claims.

Solution

The 29 Hikvision ANPR (Automatic Number Plate Recognition) cameras (DS-2CD4A26FWD-LZS/P) and 4 Hikvision PanoVu (DS-2DP1636Z-D) products were installed in the five Filippi Auto sites in Corsica: in Calvi, Figari, Cavone (Ajaccio), Ajaccio airport and the main site in Bastia. These were part of a larger Hikvision solution, including embedded 4K NVRs (DS-7732NI-I4) and a Hikvision video management platform.

They installed 4 ANPR cameras in front of each entrance gate. The ANPR reads the plate and the software consults a database where plates are stored. If the license plate is in the database, the camera is triggered to record and the barrier is opened. If the license plate is not in the database, the barrier does not open. The recordings will be stored in the NVRs with a link to the video recorder for the 4 cameras, and can be viewed by inputting the plate number into the platform software. Finally, a PanoVu camera gives a great overview in the open space, and provides perimeter security with smart functions like line crossing and intrusion alerts.



The system is very important for Filippi Auto's business because it saves manpower and makes their work more efficient. They can easily see how many free space are in the car park, making it easier to manage. The ANPR at entrances and exits makes the processing more efficient.

In addition, video evidence stored can be used to track back any damages or discrepancies, and can also provide evidence if needed to support claims.

The servers are all centrally located at the main site, which means the Director can check the situation at all the remote sites from his office. The use of the video management platform on his smartphone also means he can see the sites wherever he is. This comes in handy if there's an emergency situation - the Director will receive a notification through the system and can check what's happening and take action quickly.

The project manager in Vedetec recommended Hikvision's ANPR camera in particular because it has great recognition accuracy, with a small error rate. In fact, it boasts a capture rate of up to 99% and a recognition rate of up to 98%.

Olivier Golouboff, from Vedetec, says: *"The overall solution fully meets the needs of customers, customer satisfaction is very high. We were also very impressed with Hikvision's pre-sales and after-sales service. A technical team went to Corsica to give end users demonstrations and training support."*

The solution was realised by "Spot Surveillance" in collaboration with "New Tech".

The solution neatly combined a security solution with an application which solved specific business problems on the ground. With the ability to monitor remote sites from the palm of the hand, Filippi Auto can rest assured that its employees and premises are safe – and that the cars are also well looked after.

Automating the night watch for BMW

Location: *Bordeaux, France*

Car theft is a huge risk for car sales offices, and this is especially an issue for the premium brands. Luxury car giant Eden Auto Premium BMW built a new site in Bordeaux, France, where they house and sell new and second-hand cars, as well as having a car park for customers. That amounts to a lot of cars that need protecting! They researched and compared different technologies and selected Hikvision products to meet their needs. These were then ably installed by reseller Faurie Telecom (Group Convergence), with Hikvision's help, and the help of French distributor ITESA.

Challenge

The BMW reseller wanted a standalone system to streamline their security operation. Originally they used a night security agent, which was a costly solution. They needed to be able to integrate the security solution into a third party monitoring system, managed by Securitas, in order to reduce manpower costs.

The site posed a number of technical challenges. The team also needed to counter some crafty thinking from intruders, who were even resorting to hiding underneath cars during the day, when they can slip in unnoticed. They then could wander around the closed garage, avoiding detection by perimeter protection systems activated only at night. This meant the solution needed to focus on providing real-time, active image at night.

With a lot of flags flying on the site, false alarms were a particular issue – these would set them off regularly. The complexity of the site also gave a lot of potential for false alarms, which needed to be minimized to reduce overall costs.

Solution

The solution was made up from Hikvision products, providing a converged system, with seamless monitoring.

Central to the system was Hikvision's Security Radar (DS-PR1-60) for intrusion detection at night. The Radar has a large coverage area, and performs excellently at night, whatever the weather. This means that false alarms are kept to a minimum. Radar has the added benefit that it can position humans and vehicles on a map, making it very useful for tracking purposes.

This is where the DarkFighter IR Network Speed Dome PTZ camera (DS-2DF8225IX-AEL) comes in. The radar cameras are linked with this for auto tracking. If an event is detected, the control center automatically receives an alarm and can use the PTZ's auto-tracking function to track any intruders. DarkFighter cameras are also designed to excel at night, so are ideal for this solution.

Although radar has promising accuracy rates, the team needed to carefully configure it.



The site environment proved a complex installation, with a lot of metal that can cause false alarms for the radar. The local team drafted in expertise from Hikvision HQ's R&D and technical teams to complete the installation to a high quality and low false alarm rate.

even at night. So intruders sneaking in and hiding during the day are out of luck....

The system is coordinated using a AcuSense camera (DS-2CD2686G2-IZS AcuSense 4K NVR (DS-7716NXI-I4) and a POE Switch (DS-3E0510P-E). Finally, HikCentral provides a user-friendly VMS experience, designed especially to integrate all the different Hikvision products, to make a seamless security solution.

Christophe Chamand, from Faurie Telecom, says: *"We were very satisfied with the innovative products and onsite service provided by the Hikvision team. From presales and order to technical support and aftersales service, Hikvision has been with us throughout the process, ensuring a successful installation and a happy customer."*

With an innovative, converged security solution, BMW has been able to streamline its security,





04. Education

Hikvision's Smart Education Solution secures educational facilities with its advanced technology, powerful cameras, and critical recording devices. In protecting these places of learning, development, and exploration, campus security personnel worldwide will find this surveillance solution from Hikvision to be an absolutely essential asset.

Maintaining a safe educational environment

Location: Boulogne Billancourt, France

Schooling is high on the agenda of every parent. These days, they will also be keen to make sure their children are looked after, as well as properly educated. A school in France is using a Hikvision solution to do just that – to make sure the pupils are safe.

Challenge

Lycee Dupanloup, a private school in Boulogne Billancourt, needed to provide security and surveillance through the school complex. The school takes the safety and security of its pupils and staff seriously, and wanted to ensure it created a secure environment for learning and development.

With a high reputation in the Paris area, the school needs to maintain a high level of quality in all infrastructure and services, including security. The parents of the students also need to feel that their children are secure.

The security aims to prevent any problems around the campus, like fights in the school. Due to the high profile nature of the students, there's also a potential kidnap risk, so attention needed to be focused on the main entrance to the school and the central school yards.

With these challenges in mind, the school approached Engie ineo, a large contractor group in France covering the school sector (among others),

and who they had collaborated with before. Engie ineo responded with a solution using Hikvision products.

Solution

Engie ineo installed 8 high-end PTZ speed domes (DS-2DF7286-AEL) and 12 3MP outdoor bullet cameras (DS-2CD4232FWD-I2) around the school. The feeds from these are brought together on one screen using a new NVR and Hikvision's iVMS 4200 software in a 'command center'. The general manager of the school can check what's going on at any time, using a dedicated screen and USB keyboard with joystick.

These products were chosen because they were of a suitably high quality for the project and at a good price. The installers were also keen to get a good level of support, both national and international, for the products they used in the solution. Having worked with Hikvision before, they knew they would receive this kind of support.



Alongside the high quality of the PTZ cameras, the solution benefits from the quality of the video content analysis provided by the recorder. Using the whole solution, the school can see what's going on in covered areas, as well as looking back over previous images if they need to. There is also an element of 'prevention', with students acting differently when they know they can be seen.

Mr Dizo, project manager at the school, says:
"Now this video surveillance system is installed, we are already noticing fewer fights and less trouble between students. The cameras really help us to deliver a safe, and more peaceful, environment."



05.

Logistics

Hikvision technologies work seamlessly together to provide a holistic solution giving logistics providers, and their customers, peace of mind and a practical way to secure and streamline their supply chain processes



Parcel tracking goes visual

Location: *Le Havre, France*

Tracking goods is a central part of the service provided by freight transporters – customers like to know where their goods are, and that they have been loaded onto the truck for delivery. Using smart camera technology, the goods tracking process is now improved – something Le Havre Groupage found out when they had a tracking solution installed recently by French installer Fabrice Juvien.

Challenge

Le Havre Groupage is a French haulage company transporting goods all over France and beyond. The company has a warehouse facility of 12,000m² near Le Havre in France. They needed to upgrade their process of tracking the goods through their warehouse, and turned to Juvien to install a technology solution. This, perhaps surprisingly, came in the form of surveillance cameras.

Before the new solution was installed, they relied on scanning technology alone to locate packages in the process. This did not give them the evidence they needed throughout the journey of a container through the warehouse and onto the trucks.

The company transports around 8000 to 8500 parcels per year. Although there has never been a loss of packages, they have had incidents of customers querying whether the package was in a certain container. This meant they needed a way to settle disputes on this, with a way to track the parcels when they come into the warehouse and when they go out again.

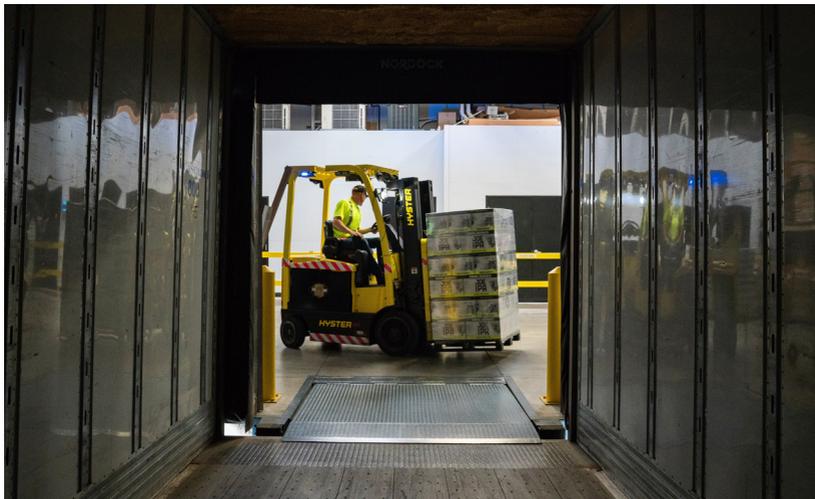
Solution

The solution saw Hikvision technology used in an innovative way. Cameras were placed on the front and back of each forklift, and a mobile NVR in each vehicle. These capture the images of each container as they are loaded on and off the truck – using the tracking number to identify it. The fleet of vehicles totals 24, so this meant 24 Mobile Wi-Fi enabled NVRs (DS-M5504HNI) and 48 Mobile Network cameras (DS-2X6622FWDI).

This data is transmitted by Wi-Fi from the forklift to the SAN server, which can store the images for future use. The system is managed through Hikvision's iVMS 5200 software, which allows users to search the database of images, in case they need to find, or track, a specific tracking number.

The SAN server also makes it possible for a recording to be created, even if the Wi-Fi signal is cut off. It will resume the recording from the place where it was interrupted.

The new solution means that customer queries can be answered with visual information.



They can actually see their package go into the truck from camera footage.

Juvien says: *"Operators can now easily track goods and products, by simply viewing the film record. We chose a Hikvision solution based on three criteria: the quality of the products, the innovation they represent, and the competitive price."*

A Hikvision solution streamlined the transportation process, meaning Le Havre Groupage could better serve its customers with more accurate tracking information. The future is also bright – the company is planning to upgrade the software at the center of the solution to HikCentral soon. This is another good example of a technology originally designed for security being repurposed to provide a very different business benefit.

Using innovation to secure truck parking standard

Location: *Clairoix, France*

When French logistics company PKM Logistique was building a huge new site in Clairoix, France, they turned to reseller SAS Serenity for its security solution. SAS Serenity delivered a complex solution, using Hikvision products – in fact more than 120 of them, including 4K IP cameras, Fisheye 360 cameras, Access Control products and HikCentral VMS. One of the most challenging parts of this install, however, was reinforcing protection in the truck parks, where the vehicles often had high value goods aboard.

Challenge

This is a logistics site that seeks to be at the forefront of security, with high profile customers that transport high value items. Customers from different sectors transport a wide range of goods, such as mobile telephony, laptops, perfumery, luxury leather goods, raw materials. PKM Logistique, and its owner, are known for use of innovative new technology to gain an edge. But it's important for them to keep ahead of the criminals – since the goods they transport, and therefore store, are very expensive. This means, theft is a huge threat, and damages can quickly reach large sums. So they needed equally innovative and effective solutions for the site itself.

The company needed to have a high level of security in the truck parking to comply with 'TAPA' certification. The Transported Asset Protection Association (TAPA) is a forum that unites global manufacturers, logistics providers, and freight carriers, among others to reduce losses from international supply chains. TAPA's Parking Security Requirements (PSR) is an industry standard governing the level of parking place security for logistics providers.

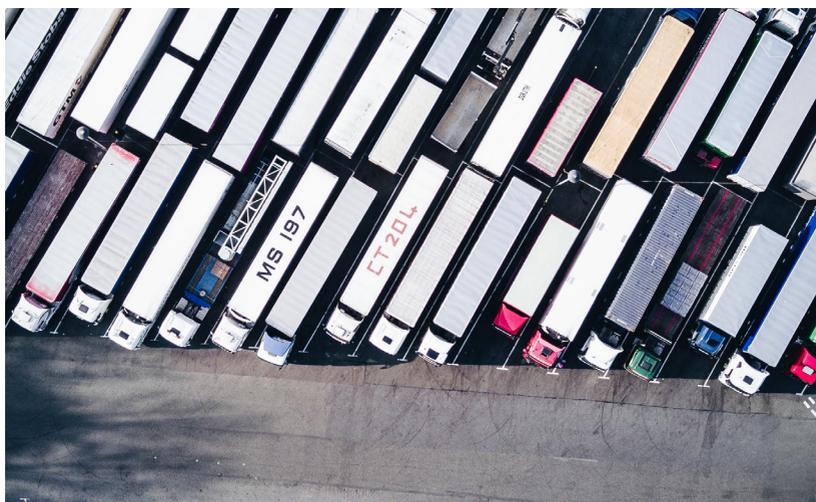
One of the challenges for this project was to present the values of innovative new products to them, gaining their trust in the latest generations of products in the industry

Solution

The solution comprised a number of layers of security.

Firstly, the trucks can only enter if the plate-reading ANPR cameras validate the pre-recorded accesses. These cameras were picked for their technologically advanced nature, their ability to associate with the existing database, and their easy installation.

For an added layer of security, to supplement the fact that this area is in the middle of an already highly protected site, thermal cameras are placed around the entire periphery of the truck park. Thermal Bi-Spectrum cameras were chosen for their sophistication, dual video sensors, and extremely reliable intrusion detection mode.



The entire truck parking area is also monitored by 180° PanoVu cameras to provide a global view of the area. They provide impressive image quality day and night, despite their compact size. They too are easy to install and associate with the existing system.

The site is destined to expand – in fact they will divert a river to enlarge the area and the connections with other means of transport. This expansion could lead to even more innovation, including robotic solutions.

The ‘human’ side of the equation is also covered, with drivers being verified through access control measures before returning to pick up the trucks.

These measures combined made the truck parking very secure and enabled PKM Logistique to achieve TAPA accreditation. This gives their customers a great deal of confidence in PKM to transport and protect their goods from the pick-up point to the delivery point.

Denis Avellaneda, President of SAS Serenity, says: *“Hikvision’s products and monitoring tools were the only ones to answer our expectations and those of our customers. Hikvision helped us a lot by trusting us and by providing us with products not yet established on the French market. PKM Logistique was delighted - in fact, their truck park is now as secure as a prison!”*



06.

Sports and Leisure

From sports arenas and concert venues to different attractions, Hikvision provides extensive, high quality security solutions that always focused on providing the best possible guest experience.

Temporary security solution makes a splash

Location: *Budapest, Hungary*

Sporting events can prove a real challenge to security providers. A large amount of people, potentially from all over the world, descend at the same time. But what do you do if the venue does not have a suitable solution in place? After the event has finished, it may no longer have a need for such heightened security. Enter a temporary solution, like the one reseller Valton Security Ltd. provided for the World Swimming Championships 2017 in Hungary using Hikvision equipment.

BP 2017 Nonprofit Ltd the Hungarian organiser of the 2017 World Swimming Championships, including 'aquatic' sports such as swimming, diving, water polo, synchronized swimming and high diving, in July was the largest sporting showcase Hungary has ever hosted. It involved almost 3,000 athletes in the different aquatic disciplines, competing in 75 contests over a period of 17 days.

The competitions took place in five venues, including the brand new, state-of-the-art Dagály Swimming Complex in Budapest, with other activities taking place in venues in the city of Balatonfüred.

Challenge

There were a number of challenges facing the organizers and professionals of Valton to make the event secure for both visitors and participants from all over the world. They needed to mitigate all sorts of risks, from pickpocketing right up to terrorist attacks.

The first challenge was that the CCTV system had to be installed at all five locations in each city for the protection of both visitors and participants.

All the systems needed to be operated on their own, but there had to be a central monitoring control room, where all camera feeds needed to be displayed and controlled as one entire common system. All system elements were installed temporarily, only for the time of the event.

Secondly, in the central monitoring room, the cameras of each system were displayed on a monitor assigned to that system. But the operators also needed to be able to see camera displays from the different sites at the same time on a monitor wall, laptops and wireless tablets. To add another layer of complexity, these platforms also needed to support different user access levels.

Thirdly, all systems needed to be shared with the local authorities. The local police force had access to the live images of the cameras, although they were not able to control the feeds. And finally, all of this needed to be achieved in a 'temporary' solution provided by Valton Security.



Solution

Valton Security looked to Hikvision for the entire solution – there was no need to include other providers, since all user requirements could be addressed using Hikvision products.

The large shopping list included 110 3MP speed domes, 20 4MP bullet cameras, 5 NVRs and equipment for the central monitoring room. Together, these created a powerful solution to meet all the requirements and challenges this project posed.

Using decoders and joysticks with built in monitors made operators' work extremely effective in keeping an eye on all the activities going on in the venues in both cities. The system used Hikvision's iVMS 4200 software running on the client workstations, making it very simple and easy to use even for operators with limited CCTV application experience. The extra benefits of a multi-language user interface also proved very helpful, with users coming from different parts of the world.

Laszlo Mihalik, Valton's Technical Director and the project's leader, says: *"The operation of the system was as reliable as expected. In fact, there were no fault reports during the event at all. Local and remote control options also worked perfectly throughout."*

He adds: *"The high resolution cameras proved to be a very good choice. Despite continuously changing light circumstances, huge crowd and fast motions they provided us with perfect images. Although the systems were installed for a shorter period of time, the usage of the resources was extremely high."*

So, what happened after the event was finished? The whole system was designed in such a way that it could be taken down again for reuse. The security company responsible for protecting the event essentially bought the system – and they keep in on hand to reuse for other events like this in the future.

Enhancing the thrill of the race

Location: *Imola, Italy*

Central to the Italian motor racing scene, Gruppo Peroni Race organizes very high level car championships in the Imola, Vallelunga and Monza Italian racing circuits. For thirty years in the sector, the activity of the Peroni Race Group includes various championships and numerous special events such as endurance tests. When they wanted to open up the racing experience to more members of the public, they turned to a solution using Hikvision products.

Challenge

The company decided to make its free events more accessible to the public and asked DirectE20, its historical partner in the audio-video industry, to come up with a solution to broadcast the live video-chronicle on YouTube, Facebook and other social events. They worked in close collaboration with Italtec, Distributor of professional security solutions specialized in planning and technical assistance.

In order for viewers to be able to experience the sheer thrill of the race, they needed cameras that could follow the high speed action. And due to the unpredictability of European weather, the solution needed to provide great images even in adverse weather conditions and poor light.

Solution

Italtec chose to design the solution using Hikvision products, and in particular Speed Dome Solution 2 and 4 MP and the 96XX and 77XX series recorders, together with monitor and keyboard to control the cameras.

They chose Hikvision for the high performance of its PTZ products, able to obtain extremely interesting rapid-focus and self-tracking. Video management was entrusted to iVMS 4200, the free Hikvision software.

All of these products were brought together in a mobile control room which could broadcast high quality images able to follow cars racing at high speed. The flexibility of the system and the adjustable nature of the cameras meant that they could respond immediately to the action, both automatically and on command from the control room.

In order to maximize the viewer experience, during the installation of the products installers needed to pay particular attention to camera positioning. It was essential to capture the images of the vehicles in the approach to curves with different viewing angles, both on arrival and departure of the circuit curve.



Alessandro Rossi, Sales Manager of Italtel, says: *"We chose Hikvision for its leadership in the field of high-tech video surveillance. Analyzing the professional CCTV market, we received lots of positive feedback from those who have been using the brand for years: we therefore decided to carry out tests, following which we definitively decided to go with Hikvision."*

This solution could be used to stream all kinds of sports events in the future.

Gruppo Peroni was also impressed. Sergio Peroni, the organization's President, says: *"Thanks to the work carried out by DirectE20, that created the mobile technology solution, today we can collect high quality video material that perfectly meets the needs of our audience. Enthusiasts can follow live racing competitions on the circuits and the material collected and filed can also be used later to make videos for advertising or repertoire purposes. We are very satisfied with the technical choices made and above all the results obtained."*

Hikvision products delivered a result in the form of an innovative system for audio and video distribution of motor racing at its best, thanks to its simplicity and flexibility.

Keeping up with players on the ice

Location: *Nationwide, The Netherlands*

Sometimes the pace of life speeds up and it's tricky to keep up. This is especially the case with intense sports, like ice hockey. In fact, NHL players can reach speeds in excess of 20 miles (32 km) per hour on the ice. In scenarios like this, it can be challenging to broadcast all games across a number of stadia, especially when they were often relying on amateur 'producers' to cover many of the games. It was this challenge that faced media streaming company LiveArena, and they turned to Hikvision and studio automated (innovated with Dutch research institute TNO) for an AI-enabled solution to automate the production process.

Challenge

LiveArena is a global company, based in Sweden, which manages and delivers more than 30,000 live events around the world each year. They are constantly looking for ways to improve the access of their services, and to make the user experience more engaging.

Traditional coverage of an ice hockey game was typically restricted to the high level games only – that meant the 'premier league' teams. Broadcast media could only afford to hire cameramen for those games. So, fans of the sports who follow other teams were not able to see their favourite teams in action through streaming media. LiveArena needed to find other ways of recording the games often relying on family members of players. To do this, the solution would need to be one where they were in full control of the production at all the arenas.

LiveArena also wanted to be able to improve the scheduling, production and graphics overlays.

Another issue was posed by the sheer speed of ice hockey. These meant that a traditional camera solution could not give clear enough images. In fact, they could sometimes give a false 'shadow' of a player, due to the fast moving action.

Solution

Studio automated had developed an algorithm to track the game of ice hockey. Hikvision customized the firmware for its 32MP PanoVu IP camera (2CD6984G0) to maximize its integration with this algorithm, so that it could keep up with the game's speed. This was made possible because of the 25 fps framerate and the 4K sensors of the PanoVu camera.

This upgrade involved the use of AI predictions to help the camera figure out the likely position of the action and the players. The information is combined with tracking to give a more accurate footage of the game. It is then streamed to users on their mobile apps, or any other connected device with a browser and the ability to play back



live H.264 content, so they can enjoy the game live wherever they are.

The camera provides a high resolution 180° spliced image, with a full panoramic view. It's also robust enough to cope with the elements outside on the field, with a built-in heater protecting it against temperatures up to -40°C. It's also IP67/IK10 water resistant to IP67 standard and vandal proof to IK10.

Armed with these technologies, LiveArena can open up the game to fans, wherever they are and whoever they support. They can broadcast every game from arenas with the fully automated support.

The solution has also delivered additional features like the Manual Situation Room (MSR). Since the Hikvision camera captures the whole field LiveArena can do analyses of specific incidents after a game. For example, referee boards can review any instances of a game that might result in additional penalties, like a severe rule breaking that could result in the player being stopped from participating in future games. This analysis of a game can also help coaches to train players.

Pontus Eklöf, LiveArena COO, says: *"We are thrilled about what this solution has done to our live game video production. Not only do we broadcast more games. We also have a better video quality for the viewers in combination with a whole lot of new features. All of this benefits the viewers, the ice hockey federations and the individual clubs."*

This project covered 130 ice hockey stadiums throughout the Nordic region, and there are plans to implement the solution in another 300 this year. LiveArena is also looking at using multiple cameras to further enhance the viewer experience both for online game viewers as well as video coaches and other ice hockey professionals. So, it seems the solution is keeping up with this high-speed game in more ways than one.

Upgraded video monitoring solution for Ipswich Town FC

Location: *Ipswich, United Kingdom*

Before the 2019 season Ipswich Town Football Club was faced with an ultimatum: upgrade their CCTV system or risk not being able to play at their Portman Road headquarters. They called in the experts from ClearView, who came up with an ingenious solution which delivers high quality network video images over legacy coaxial cable. Portman Road is a fully seated, 30,000-capacity venue, which has hosted an England international against Croatia as well as numerous England youth team games. Its primary role, of course, is as home facility for Ipswich Town.

Challenge

Without an upgrade to the stadium's CCTV system, the club was informed it wouldn't be able to commence the new season. That's a pretty big deal, when you're a football club.

Specialist security and surveillance company ClearView maintained the club's existing CCTV system, and it was agreed that the existing CCTV surveillance system had become outdated and was in need of an overhaul. The ability to increase recording capacity, as well as allowing for recording of higher quality and higher resolutions images, was a key consideration. The pre-season ultimatum naturally meant that a newly updated CCTV system was a priority, but ClearView had to deal with some major challenges presented by the stadium itself.

Portman Road has four large stands, with the existing CCTV system utilising analog coaxial cables that ran over the roofs of those stands. The club needed the ability to deliver high resolution, evidence-quality images for crowd monitoring and safety purposes. With that in

mind, Clearview had to devise a solution to ensure those IP images could be transmitted over long-distance coax cable.

Solution

ClearView designed a solution using eight Hikvision 8MP Network Speed Domes, which are able to operate in very low light conditions. These cameras were positioned strategically around the stands of Portman Road so as to monitor crowd activities and safety at all times. Crucially, they were able to send their ultra-high-resolution images over a conventional analog coaxial cable.

An additional seven Hikvision 2MP Turbo PTZ cameras were installed around the outer perimeter of the stadium, also monitoring crowd and safety conditions. Whilst not the high 8MP resolution of the internal stadium PTZs, the quality of these images over the shorter distance being covered far exceeded the original analog images and allowed the club to keep their costs within the budget.



An additional thirty-three 8MP Turbo Dome cameras, which are vandal resistant and have a low-light capability as well, were deployed strategically throughout the Portman Road facilities, including outside the stadium covering surrounding buildings, and in various locations under the stands. These were for crowd monitoring in public areas such as bars, corridors and function rooms.

All the images are stored on 48TB of Seagate Skyhawk hard drives using three Hikvision Turbo HD recorders, all running Hikvision's HikCentral video management software. These, together with three separate PC workstations, each allocated sixteen specified cameras, allow users to monitor the whole stadium during match days. Three 48-inch high-resolution wall-mounted monitors, each displaying 16 cameras, allow for continued overall viewing should an incident occur while one of the workstations is being used to focus on that situation.

"We were really happy with the quality of the images," said ClearView Research and Development Engineer James West. "We knew the cameras were able to deliver 8 megapixels of

resolution, but we wanted to make sure the system we installed was capable of delivering those detailed pictures across the legacy cabling. The combination of Hikvision cameras and Veracity transmission products worked perfectly and meant that the system was not only able to do the job it was designed for, it was also cost-effective."

"Overall the picture quality is first class, the system is easy to operate and the ability to focus in further on 'live' incidents is a terrific feature," says. "The system has certainly gone a long way to ensuring fans attending matches at Portman Road can do so in a safe and secure environment."

Dundee aqua park gets thermal video solution

Location: *Dundee, United Kingdom*

When Foxlake Dundee, a new water adventure centre opened in the heart of the Scottish city, Webster Security & Fire approached the facility's management with a novel after-hours surveillance proposal: using thermal cameras from Hikvision instead of a manned guarding option. The resulting video surveillance system has proven immediately successful.

Challenge

The Dundee facility, which opened fully in summer 2018, includes a large floating assault course, which has proven hugely popular with visitors, featuring huge obstacles, slides and rafts, and a giant 3.5m inflatable tower known as 'the Mountain'. Unfortunately, due to its city centre location, the assault course and the wider facility was likely to be something of a magnet for unauthorised activity, primarily of the inebriated variety.

The concern was that accidental or deliberate damage or vandalism to the equipment was a real risk – and along with that came the danger of injury or worse to those attempting to exploit the park, at night, in the dark, unsupervised on the water.

The Park management's first instinct was to investigate the option of manned guarding: having a security officer on-site during those out of hours periods overnight when the facility was at its most vulnerable. But an approach from Brian Davidson of Webster Security & Fire was to change that.

The challenges presented by the Foxlake Dundee site were not insignificant. The system needed to be remotely monitored, and based on some form of movement detection – on a site which itself was constantly moving, due to the changing tidal water levels. Davidson and Webster Security & Fire got in touch with Hikvision in Scotland and together they designed a solution to meet all of Foxlake's needs.

Solution

The centrepiece of the system was the use of Hikvision thermal cameras to detect activity on the jetties. This is complemented by the use of GJD motion detectors and Hikvision cameras to pick up movement on approach areas, further Hikvision cameras which monitor the internal office reception areas, and additional Hikvision cameras providing a security, health and safety and management overview of the both the assault course and the paddle and wakeboarding facility areas. A public address tannoy system is also connected to the surveillance solution.



The Hikvision thermal bullet cameras highlight areas of heat difference in the field of view – so a human body is always visible as hotter than its surroundings, particularly in a marine or waterfront environment. Hikvision’s thermal cameras also utilize behavior analysis technology, so figures moving into specific zones in the image can automatically generate alarms.

The advantage of thermal cameras for a water-based site like Foxlake is that they can operate in all weather conditions – they’re not impeded by fog, mist, heavy rain, snow or other environmental factors, the sorts of conditions which could severely impede even the most advanced of conventional cameras.

The other cameras in the Foxlake Dundee system benefit from Hikvision’s Darkfighter technology, allowing for video monitoring and recording in even the lowest of light conditions. And the whole solution records to a Hikvision 8-channel DeepinMind network video recorder, which utilises powerful AI technology to learn to filter out false alarms and accurately raise alerts.

Zak Hegarty, Foxlake Dundee’s manager, says: *“We’re really happy with the system. The video footage quality is very high and we’re glad we haven’t had to go down the manned guarding route, as similar facilities have done. We appreciate that Webster and Hikvision took the time and thought to design something that would work for us in our specific circumstances. Of course, the proof is in the performance, and the fact that a number of intruders have been quickly and effectively warned away is evidence that it is doing the job it was designed for.”*





07.

Industrial

And Industrial assets are vulnerable to theft and vandalism. Hikvision offers a wide range of effective and reliable solutions for the private sector so that the focus can remain on the business, not security.

Raising resolution... in a future-proof solution

Location: *Budzyn, Poland*

Large industrial units often have a large area containing quite disparate security needs. Hikvision has a wide range of technologies to cater for every need, as was recently seen by a rubber producer in Poland. Kabat Tyre, in Budzyń, produces of rubber products for industry and agriculture, including rubber mats, machine tires and inner tubes. When it came to developing a new security system to cover its 30,000 m² production plant, Kabat turned to system integrator Tel-Kom Serwis, which used Hikvision products to deliver a hi-res fit-for-purpose solution that was also scaleable for any future development.

Challenge

Kabat Tyre needed to overhaul their security system which was smaller and using lower resolution devices from different manufacturers. They needed to provide hi-res observation for their production halls, warehouse, office building and outdoor areas, particularly to allay their fear of theft from the plant and to provide peace of mind and operational support in case of accidents.

In some areas, image quality in difficult lighting conditions was a particular concern. Not every part of the large area is well lit. Landfills for black rubber products (for example tires) do not reflect well the light, making them difficult to observe with cameras of lower sensitivity.

In addition to this, they needed reliable motion detection and the ability to combine independent recorders into one system.

The system needed to provide all of this in scaleable way, as this would be a system that will be expanded in the future.

They wanted to be able to add new features at an affordable price, without a nasty surprise when the bill came in. This was particularly challenging since they could not know what functions they will need.

Solution

Tel-Kom Serwis built a solution for Kabat based around five Embedded 4K NVRs (DS-9632NI-I8 and DS-7716NI-I4). These provided a strong core for the solution, also using iVMS 4200 software to manage all of the cameras, all operating within one LAN.

For the outdoor placements, numerous Ultra Low-light Smart Bullet Cameras (DS-2CD4B26FWD-IZS) were used. These use Hikvision's DarkFighter technology to provide bright, colorful images even in very low light conditions.

To cover the internal areas of the production hall and corridors, the EasyIP 2.0 plus fixed cameras (DS-2CD2T42WD-IS) were installed, and IR fixed cameras (DS-2CD2142FWD-I) monitored the office.



The tire testing points needed a slightly different device, since temperature exceptions needed to be monitored to protect against potential fires. So here, a Thermometric Bullet Camera (DS-2TD2136T-15) was used.

With hi-res images, even in the darkest areas, security operators have a much better view of what's happening across the whole 3.5 hectare site.

Arkadiusz Wierzbicki, from Tel-Kom Serwis, says: "A Hikvision solution made perfect sense to deliver this solution for Kabat Tyre as it provides easy installation, reliability, intuitive operation and good image quality. There are also no hidden costs, which was important for the ongoing development of their system."

So Kabat Tyre now has a high resolution solution that brings all of its security needs together in a system that can be expanded to meet their changing needs in the future.

The future also looks rosy, as Kabat's investor was so satisfied with the quality of the system, that it is already in talks with Tel-Kom Serwis about expanding it further. It is planned to build more halls increasing the production potential, in which CCTV systems and Access Control will be installed by Tel-Kom Serwis

Constructive protection with PIR equipped cameras

Location: *Nationwide, United Kingdom*

For one installer, Hikvision's range of Turbo HD PIR-equipped cameras has had a dramatic impact on his business, allowing him to more efficiently monitor and secure construction sites and other valuable locations during vulnerable out of hours periods. Forward Securities used Hikvision PIR cameras to do just that.

Challenge

Building site compounds can include any number of super-valuable and enticing materials for potential thieves. These include diesel, copper, tools, cabling, right down to bricks, breeze blocks, agricultural fuel, road diesel, even the metal gates. This can represent thousands and thousands of pounds worth of equipment stored there overnight.

On critical sites like these, where there's a lot of activity during working hours, people are able to move those PIRs in the daytime when they're off. Then, at night, they're then able to return and rob the site without being picked up by the detectors, and then move the PIR back to where it was previously.

infrared detectors – to raise an alert when the compound perimeter was breached.

Solution

Forward Securities was on the lookout for a solution which would counter that potential for tampering and provide a more effective deterrent to potential thieves. Then they noticed that Hikvision had released a new range of Turbo HD PIR cameras.

With a PIR camera, during the armed period, if someone moves into its field of view, there's an alarm. If someone covers it up, it goes into alarm. If someone moves it into another direction, it goes into alarm.

The Turbo HD PIR camera range uses advanced video surveillance technologies to improve alarm accuracy and prevent intrusions. Video verification of alarms means a rapid response from a manned guarding service can be achieved.

The camera's built-in PIR detector captures infrared light given off by human bodies and distinguishes it from other visual "noise." It can be "double knocked" with Hikvision's Turbo HD K series DVR's motion detection to reduce false alarms caused by moving targets without human body IR emission.



This way, filtering false alarms reduces storage space and costs, and it also means more efficient post-event footage search.

The camera also produces a flashing white strobe light that serves as a warning signal to stop intruders. And the white light serves as supplemental lighting, enabling the camera to capture clear images of suspects as evidence when the alarm is triggered, even in extremely dark environments – such as the construction site compounds.

The model Forward Securities prefers to use is the DS-2CE12H0T-PIRL, a 5MP bullet PIR camera referred to as the 'PIRL'. They offer 2560 x 1944 pixel resolution, smart infrared illumination up to 20m, and Hikvision's own 'up the coax' technology, which allows cameras to be controlled over a coaxial cable from the DVR and also to transmit the alarm signal to DVR. They're also IP67-rated for external use, so they're tough and suitable for the sorts of environments, like construction sites, where they're most needed. Other site setups can include an audio warning system, particularly for very high value equipment.

"If the intruders persist despite the warning, we then get a guarding response. It's not just big construction sites where the Turbo HD PIR cameras are effective, I do use them on other high value projects as well." Paul Hookings, Managing Director of Forward Securities.

He continues: *"Ultimately, the Turbo HD PIR cameras are incredibly effective. They pick up suspicious activity, including thefts and attempted thefts, three to four times a week across all of our sites. That means they're actively helping to prevent the thefts of materials worth hundreds of thousands, sometimes millions of pounds."*



BANK



08. Banking

Hikvision's Smart Banking Surveillance Solution helps you conduct effective surveillance of bank assets, manage the security of your clients and personnel, protect restricted areas, and secure ATM areas with unwavering reliability.

Securing safety deposit boxes

Location: *Nationwide, The Netherlands*

When your business is responsible for the valuables of a lot of people, security is a crucial business value. De Nederlandse Kluis, the largest independent provider of professional safe deposit boxes in the Netherlands, recently upgraded its security system to cater for suitably large data storage and multiple, controlled access points. Systems integrator Van der Perk Security installed this, using a Hikvision solution.

Challenge

De Nederlandse Kluis needed to be able to back up video recordings from cameras in locations all over the Netherlands in a central datacenter.

The locations needed to be able to see each other's feeds. However, although only one uploaded stream per camera was allowed to the datacenter, it needed to deal with multiple streams throughout the whole system. Bandwidth control was an important element of the project, as they deal with a lot of content. With a number of users accessing the system from different locations, access control rights management was also important.

There was also the question of being able to see in the vault after another security measure filled it with smoke.

Finally, secure storage is a key part of a security solution that spans so many locations, with feeds from multiple cameras creating a large amount of data.

Of course, all of this needed to seamlessly integrate, with a central management system controlling it all and providing operators with an overview, depending on their access rights.

Solution

In total, the solution comprised 720 Hikvision cameras of increasing resolution (2 MP / 3 MP / 4 MP). These are installed at 32 locations around the Netherlands, each with its own Embedded 4K NVR (DS-7716NI-K4). The security in each of the vaults has been increased with a bi-spectrum thermal camera. This is to allow operators to monitor the situation inside the vault even when another security feature has filled the room with smoke to make it impossible for any 'wrong-doers' to see. With the thermal camera able to pick up thermal signatures, the system can still detect people, giving security personnel the advantage.

The central data center holds all of these footages separately to the vault locations, so even if the NVR (and therefore, its recordings) is stolen, the footage is still accessible, making



further investigation possible. To achieve this, a central server was installed, with a Hikvision Hybrid SAN storage server (DS-A82024D), boasting a 64-bit multi-core processor and 24 HDDs. The solution was completed with a HikCentral video management system used to bring all of the elements together.

HikCentral delivers the flexibility to manage all streams from all the locations, as well as the users from them. Different users have various levels of access, and this is all administered by the HikCentral software.

For example, the system can combine 12 user streams into one. This set-up means that security personnel from each of the sites can tap into the feeds from another. They could, for example, have the footage from different sites on different screens within their office, making it easier to monitor each other's premises.

This means that all branches of De Nederlandse Kluis are monitored 24 hours per day through live camera images. These images are sent real-time to the control room, where they can be analyzed and stored.

A unique feature of this solution is the fact that the back-up only kicks in when the system detects motion in one of the vaults. This is an innovative way to reduce the amount of data stored – helpful both in data storage requirement and sheer amounts of data to search through in case of an incident.

Peter van der Perk, owner of the system integration company responsible for installation, says: *"The total solution with the HikCentral VMS and back-up recording is exactly what De Nederlandse Kluis needed from their management system. On top of that, Hikvision could provide the best solution for the best price."*

With the help of Hikvision and the power of the HikCentral VMS, De Nederlandse Kluis is able to streamline its security feeds across its whole network. It can also store that footage remotely in an efficient data center. So, many people can sleep soundly tonight knowing that their valuables are under safe watch...





09.

Utilities and Energy

Hikvision's Utility & Energy Vertical Solution combines proven durability with advanced technology to create high-security systems. High performance monitoring enables authorities to protect many essential areas such as water purification sources, power plants, petro-chemical refineries, ports, and telecommunications centers.

Using waste to gain time

Location: *South and West Zealand, Denmark*

Waste management has become a hot topic in a world where managing resources is crucial to the future of the planet. In fact, earlier this year the scientific community warned that the Earth was heading to 'the point of no return' unless immediate action to reduce harmful emissions is taken. In this political environment reuse is more important than ever. Affald Plus in Denmark is a waste disposal company that treats waste from South and West Zealand regions of Denmark to create a valuable resource.

It turns the waste into materials for reuse, like biofuels, copper, paper, and 'upcycling' of construction waste.

But there are risks involved in these activities - for example, waste silos can produce flammable gases which could ignite if the temperature gets too high. To manage this risk, Affald Plus turned to SeeSafe, a leading Danish security provider - and SeeSafe used Hikvision products to build the solution, including thermal cameras and a decoder managing a video wall for the control centre.

Challenge

Since many of the silos are unmanned, it's important that the company has an accurate oversight into what is going on at each of them. Not only do they need to be able to see that they are safe, and that there are no unauthorized persons 'hanging around', but also that the temperatures inside are within an acceptable range. Operators are looking out for 'hotspots' - areas where the temperature has risen to a level

where they need to carefully monitor them, or act. Hotspots are static, but if they move, then it's likely that there is actually a fire - the nature of flames is much more random, moving around.

Since all of the silos are monitored for a central security office, it was also important to bring in all of the information to the same place and make it easy to see. In order to make swift decisions, the data needs to be clear, accessible and current. In past, this task was very time consuming, with security personnel completing two rounds of the whole plant every day. This also meant that they could not react as quickly to any potential issues.

Solution

The complete solution took the form of a mix of Turbo HD and IP cameras, DVR and encoders. But the hero products were several thermal network bullet cameras (DS-2TD2136-10) and a decoder device (DS-6910UDI) that managed a video wall in the central security office.



The thermal cameras were chosen specifically for their ability to detect a potential fire through temperature measurement.

They can measure temperature between -20°C to 150°C , with an accuracy of $\pm 8^{\circ}\text{C}$. Each camera can support 10 fire points, and when the temperatures reach a predefined level at one of them, an alarm is sent directly to the control center.

Here all the information from the cameras is combined, so operators can easily see what and where the risk is and act accordingly. The decoder displays the decoded video stream on the video wall by directly linking the cameras in the solution. It also allows the video wall to display temperature measurements, dynamic fire source detection and VCA information in live view and playback.

With thermal cameras constantly on the lookout for rising temperatures and a video wall to make it easy to see the status of the silos, Affald Plus Operating Manager Jeppe Steen Elvang can rest easier.

He says: "With these new thermal cameras we can constantly monitor the heat of the large amount of waste we have in silos. We get alarms when it approaches dangerous temperatures. We can now follow all processes effectively and monitor critical sites in the plant and at our unmanned locations."

With the help of SeeSafe and Hikvision cameras, Affald Plus can contribute to recycling targets in a safe and sustainable way. And, hopefully, with the continuing efforts of companies and projects like this, the point of no return predicted by scientists will be pushed further away.

Preventing fires in recycling industry

Location: *Nationwide, France*

While the benefits of recycling have been known for years, what people often don't realize are the risks attached. The waste industry deals with a number of potentially combustible materials, from aerosols to lithium-ion batteries. And when these are all put together and processed, the chances of a fire are high. In fact, the recycling industry in France has the highest level of reported fires of all industries. That's why one of the leading French recyclers turned to technology to help them. The solution was made up from Hikvision technologies by MyLinks, a specialized fire detection solutions integrator.

Challenge

On top of the obvious safety risks caused by fires, there's also environmental and cost implications, with damage to machinery that can cost millions. The industry is also regulated by an environmental organization called DREAL and recyclers are required to equip their sites with fire prevention equipment.

It's important for any system to detect a fire as early as possible and alert relevant authorities quickly. The system also needed to account for the site's existing operational constraints (like working time, and heat generated by end-user's equipment (forklift, crane, truck, etc...)).

In order to successfully counter the risk of fires, the system needed to integrate with the fire prevention infrastructure installed in the premises. These ranged from compartmentalization methods, like fire door management and water curtain command, to fire 'extinction' devices, like water cannons and solenoid valves. MyLinks supports the end-user with all these. One challenge was to design the system precisely so that the camera could work

seamlessly with the water cannons and could cancel the water spray in a false alarm, although these are very seldom.

Solution

MyLinks installed a variety of Hikvision cameras: including Bi-spectrum Dome cameras (DS-2TD4136T), Thermography Turret cameras (DS-2TD1217-2) and Thermography Cube cameras (DS-2TA21-2AVF (or DS-2TD3017)).

A thermography dome camera is installed at the centre of a large building on site. Any object with a temperature above absolute zero emits a detectable amount of radiation, called 'emissivity'. The camera can detect a change in the emissivity of an object or surface when temperature rises, for example, so it can prompt an alert.

In this recycling solution, water cannons are configured to respond to these changes. Water cannons are placed on the right and left of the dome camera, part of the 'extinguishing' process.



MyLinks calibrated the devices so that when an elevated temperature is detected, the relevant cannon responds immediately by spraying water in that specific area. The enhancement of a thermal camera makes it possible to detect and extinguish very quickly when a fire does start.

However, the focus, of course, is on prevention, so the system performs regular tests. A daily motion test and an electrical signal checks the integrity of the lines controlling the fire valves. Any anomaly detected during these operations sends an error message to the fire panel where the operator can take the necessary measures without delay.

On top of this, thermography bullet cameras (DS-2TD2136T-10) and Bi-spectrum bullet cameras (DS-2TD2636T-10) are installed on indoor and outdoor locations on the site in order to monitor paper, plastic, wood, metal and Waste, Electrical and Electronic Equipment (WEEE) storage. Even the conveyor belt of the sorting machine is covered - by a Thermography Cube camera (DS-2TA21-2AVF). This prevents burning waste from entering the machine.

The system is set up to send alerts when a hot spot is detected.

Since the cameras were installed, multiple fires were detected immediately on the recycling site over summer.

Albert Sintes, Chief Technical Officer and Associate of MyLinks, says: *"These cameras were chosen because of their superior range/accuracy ratio and extended temperature range. We found Hikvision technical support reactive and of a high quality. We also were able to easily integrate the cameras with other brand solutions such as HydroTop, Milestone and Vanderbilt and configure them to the specific customer needs."*

Using a variety of different thermal cameras, the amount of fires in this high 'fire-risk' industry are reduced. This has a positive effect on the recycling company's costs, but also, more importantly, reduces the risk to the people and the environment around the site.

Reducing fire risk at unique Recycling Lives facility

Location: *Preston, United Kingdom*

Hikvision's Thermometric temperature-measuring thermal bullet cameras are revolutionising fire safety for Recycling Lives, a truly unique company which combines its charity work with operations as a scrap metal and waste recycling company, thanks to innovative thinking from ADJ Fire and Security. Recycling Lives is a very special business. Ostensibly a recycling and waste management operation, they actually use this commercial element to support and sustain charity programmes for offender rehabilitation, residential support and food redistribution.

Challenge

At the Recycling Lives site in Preston, on Longridge Road, ADJ was asked to help devise a solution which could help the Recycling Lives staff prevent and detect fires on-site during and out of office hours.

Fires can happen within waste piles on site, and can end up burning inside without any notification. They can seriously flare up when the pile is disturbed. There are batteries stored on site from depolluted cars and these can also be a serious fire hazard if ignited.

Solution

ADJ, Hikvision and Recycling Lives collaborated on the development of the ideal system for Recycling Lives' specific requirements. ADJ recommended the use of Hikvision's Thermometric thermal bullet cameras, specifically the DS-2TD2136T-15 model. These specialist cameras are designed to detect even minor changes in temperature using thermal imaging technology.

The camera uses cutting-edge image processing technology, including Adaptive Automatic Gain Control, Digital Detail Enhancement, 3D Dynamic Noise Reduction, and a Noise Equivalent Temperature Difference of less than < 40mk. Its powerful behavior analysis algorithm enables automatic smart detection including Line Crossing, Intrusion, and Region Entrance & Exit, and it also provides a reliable temperature exception alarm function and advanced fire detection algorithm. Temperature measurement range is -20° to 550° with ±2° accuracy.

The thermal imaging module provides 384 x 288 resolution, a high sensitivity sensor, and supports contrast adjustment and shutter adjustment in various modes. There are 15 palettes of adjustable colour available, and because this is a thermal imaging camera rather than a conventional CCTV device, there's no need for additional lighting.

Nineteen thermometric cameras were installed initially at the Preston site, with more set to be added in future.



Cameras are located in the high-risk areas where fires could break out such as the plant rooms and stockpiles, shredder, and depollution areas. When the cameras detect an increase in temperature that signifies a potential fire risk, they automatically raise an alarm and alert the client to the issue. That allows them to take action much more quickly than relying on traditional video or other forms of fire detection – they can react immediately even to the risk of fire breaking out.

The results have been tangible, and have impressed some influential people. Recycling Lives had a visit from the UK Environmental Agency as part of a routine inspection. The EA was impressed with the standard of risk management and controls on the site, including the recent investment in fire detection technology.

The success of the Preston solution has prompted Recycling Lives to engage ADJ to implement similar systems, over time, at all their other sites across the country.

Recycling Lives Compliance Manager Dave Gallagher, says: *“We’ve been impressed with how ADJ Fire & Security Ltd and Hikvision have worked collaboratively with us to identify how the technology can best be employed to reduce risk and look forward to the enhanced protection the system provides.”*

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