GIT SECURITY

MAGAZINE FOR SAFETY AND SECURITY





Proof of Concept

Dear Readers,

We are living in a world where we get flooded with messages almost 24/7 and even for me as a journalist and media pro, it is difficult to distinguish between useless (or even wrong) information and the pieces of information we urgently need in our private space or to perform in our business lives.

It is our ambition to deliver you the kind of information needed and to select content that really helps you during your business day. If you look at a topic like AI and its use in the safety and security world or if you take a closer look at analytics tools that promise you the world, it is easy to get lost and hard to decide who you can trust. We know for sure that you're asking vendors and us as the media to present a proof of concept, a POC.

> At least for perimeter protection solutions, we can deliver such POCs for the systems we tested in the first round of GIT System Test Video Analytics last year and the second round we present in this issue including the new GIT System Test Perimeter Protection starting on page 32. It was good to see that video-based systems can be a key element in perimeter protection. They can be used to monitor perimeters effectively and at limited financial cost. The tested systems show great detection rates and can be used in conjunction with other measures for perimeter protection. LIDAR, radar and photoelectric sensors serve this purpose to the same degree if they are chosen well and the decision which type of system to select or even combine is not straightforward and must be decided on a project-by-project basis. As you will see, even with the information we provide, a decision will need to be based also on your experience and the knowledge of your trusted partners.

> > When you go through this issue, you will see great examples for such trusted partners and there is a choice of great products that our readers have chosen: Starting on page 20 we present the winners of GIT SECURITY AWARD 2024. Congratulation to all winners.

Stay safe and enjoy reading this issue!

Heiko Baumgartner For Wiley's Safety and Security team







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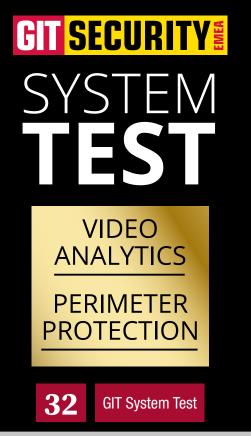
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Safer Roads with Intelligent Traffic Solution

Dahua Technology released its Intelligent Traffic Solution to provide comprehensive and intelligent road transportation solutions and smart technologies, enabling safer and more sustainable roads and ensuring people's safe and efficient journeys. One violation enforcement unit integrates ANPR, traffic violation detection, speed measurement, traffic flow detection, driver behavior analysis, and other intelligent functions to meet the needs of effective traffic enforcement in various scenarios. Strong ambient light during daytime can lead to insufficient illumination in the vehicle and poor data acquisition rate. Therefore, supplemental illumination of the target is required while suppressing the ambient light. The SPC constructs an optical model by modulating the spectral channels and adding polarizers to effectively capture violations inside a vehicle throughout the day. Moreover, Dahua also adopts advanced GS-CMOS image sensor and high-performance AI processor, integrates deep learning algorithms, and upgrades image effects using Darklight technology. It realizes clear and vivid images without color deviation under 80lx ultra-low illumination, reducing light pollution while improving the effectiveness of traffic enforcement and ensuring driving safety 24/7. https://us.dahuasecurity.com



A+A 2023: Post Show Report

A+A 2023 closes after four exciting days with an impressive balance. Under the leitmotif "Inspirations for a better Work Environment", the trade fair set new standards and seamlessly followed on from the success of previous events. 2,200 exhibiting companies from 58 nations in total presented their products and innovations in 12 halls on more than 80,300 square metres. To the tune of 62,000 trade visitors from 140 countries travelled to Düsseldorf to obtain information on all relevant topics concerning the work environment at this the leading trade fair. An impressive 96.4% of visitors confirmed that their expectations of their visit to the trade fair were more than fulfilled. This time, two of the most important megatrends of our time were placed centre stage: digitalisation and sustainability. The innovations in the field of digitalisation of the work environment, which were presented for the first time at the trade fair, proved particularly noteworthy. Smart wearables and PPE, order apps for hazardous materials management, Al-based health coaches as well as virtual reality applications and exoskeletons are examples of technologies that lead the world of work into a digital and sustainable direction. These developments not only support workplace safety but also help to increase efficiency and create healthier work environments. The next A+A will be held from 4 to 7 November 2025.

www.messe-duesseldorf.de



Bosch Building Technologies to Focus on Systems Integration Business

Bosch aims to consolidate its capabilities to achieve a globally leading position in the systems integration market. Bosch is realigning its Building Technologies division: in the future, the division is to focus on its regional integrator business, with solutions and services for building security, energy efficiency, and building automation. The company plans to sell most of the Building Technologies division's product business. This includes the Video, Access and Intrusion, and Communication business units, and affects some 4,300 associates at more than 90 locations worldwide. Bosch is now looking for a buyer who will take on all three business units together with their associates and locations. The product business with firealarm systems, by contrast, is not to be sold. Because of its importance for systems integration, it is to be merged with the integrator business and continued. "We want to become one of the global leaders for systems integration in building technology and to seize the favorable opportunities for growth in this market. To achieve this, we need to consolidate. This is why we will in the future be focusing on systems integration as our core business," said Christian Fischer. As deputy chairman of the Bosch board of management, he is responsible for the company's Energy and Building Technology and Consumer Goods business sectors. "We are confident we will be able to find a buyer who will take over all three business units, and who will further strengthen the business and give it a secure future." He explained that, for strategic reasons, Bosch does not intend to develop this business further. Thomas Quante, the president of Bosch Building Technologies, added: "The product business is excellently positioned for a promising future under a new owner: innovative products, highly skilled associates, and a market environment with attractive opportunities for growth." Following the realignment, the Building Technologies division will employ some 7,600 associates, and operate at 40 locations in 8 countries. www.boschbuildingtechnologies.com



Inter Airport Europe 2023: 74% More Visitors

The 24th edition of inter airport Europe, the International Exhibition for Airport Equipment, Technology, Design & Services, ended at the Munich Trade Fair Centre in Germany after four days of flourishing business. From 10 - 13 October, more than 14,000 attendees of which over 7,500 were trade visitors came to Munich to network, discover the latest trends and developments in the airport industry and source innovative equipment and systems. This represents a 74% increase in visitor numbers compared to the previous show in 2021. The growth in visitor numbers, the high level of internationality and readiness to invest indicate that the recovery of the airport industry is in full swing. A total of 437 exhibitors from 37 countries showcased their products at the world's leading exhibition for the airport industry. The top-five exhibitor countries were Germany, Italy, the United Kingdom, France and the Netherlands.

www.interairporteurope.com



Amthal Styles Out Security for Arcade Games Bar

Amthal has continued its winning streak with fan-favourite arcade bar NQ64, blending in critical security systems for its newly opened Shoreditch site for the benefit of all staff and guests. The new addition in Shoreditch, NQ64's 10th UK venue and biggest site to date, offers a choice of more than 50 nostalgic and classic arcade games machines and consoles. It is the first site to offer food alongside craft beers and cocktails. Amthal previously worked with NQ64 to secure its first site in London Soho and returned to work with the property management team to install remote monitored IP CCTV, intruder alarm and intercom entrance systems to its Shoreditch bar. Says Andy Platt, Property Manager at NQ64 Arcade Bars: "As our biggest site to date, our opening in Shoreditch was highly anticipated and we're thrilled with the results. The team worked hard to make sure this is a cool, safe space for drinking and eating, right from the venue entrance via a curly slide, as well as playing retro games and consoles. We hope it's a venue that continues to stand out as a little different, nostalgic for many to remember the best of our childhood days."

www.amthal.co.uk

BSIA Founder Members Providing Key Services to Homeless Charities Across the UK

The British Security Industry Association (BSIA), founder members Securitas UK, has been working with homeless charities and funding initiatives that will mean the delivery of hot meals and accommodation for those who find themselves in need of services as well as providing key provisions to assist in a better quality of life. Working with Calderwood House in Cumbria, which was set up to help people experiencing homelessness get back on their feet, its charitable donations have funded a bedroom for a year as well as offering residents access to a variety of courses, including Fire Marshall, First Aid and Mental Health First Aid and helping them develop their CV writing and interview skills. In addition to this, it has donated furniture and computer equipment within the 'Hub', a communal room within the House, loaned a minibus for a year for day trips,

which will also assist with its 12-week recovery recreational programme, and purchased a stock of warm hats, gloves, jackets, and some high-vis outer layers for them to wear when out and about. Their work has also been recognised as a shortlisted Sustainability Social Value Champion at the BECBCA Awards.





Shaun Kennedy, Chief Operating Officer for Central Europe, Securitas

Comelit-PAC Captures Fire Safety at Deva City

Comelit-PAC has been working with partners GB Integrated Systems to fit the latest fire safety systems at the Hop House in Deva City Office Park to ensure the safety of all who work and visit the unique work environment. Part of the former Threlfalls Brewery, an iconic feature of the Manchester city skyline, Deva City Office Park presents an eclectic mix of business space presented in a Grade II listed Brewery building or 17 high-spec self-contained office units. With the need to offer 24/7 security

and fire safety, GB Integrated System worked directly with the site management team to upgrade the addressable panels, and specified Comelit-PAC's latest LogiFire solution. GB Integrated System specified Comelit-PAC's LogiFire Easy fire safety solution.

www.comelitgroup.com



www.GIT-SECURITY.com GIT SECURITY 4/2023 7

Gunnebo Group Acquires Italian Lock Manufacturer Tecnosicurezza

Gunnebo Safe Storage took the next step towards establishing a stand-alone high-security locks business with the acquisition of Tecnosicurezza, a leading manufacturer of electronic locking systems for safes, vaults, and ATMs. Based in Verona, northern Italy, Tecnosicurezza also has subsidiaries in the USA and Spain. "Gunnebo Safe Storage has a strategic goal to establish a standalone high-security locks business, delivering value by differentiating and leading change in the locks market with a complete offering to the high-security locks eco-system," says Andrew Willdig, VP of Global Customers, Gunnebo Safe Storage. "By focusing on the needs of our customers and supporting their daily operational processes, with an emphasis on connectivity, this high-security lock business will increase our support to them along the end-to-end value chain." The acquisition of Tecnosicurezza will enable the creation of synergies across the existing portfolio of Gunnebo locks, as well as across the safes and vaults business, by leveraging technology and customer service, combined with Gunnebo's digital expertise.

www.gunnebo.com



Anna Miller, Tecnosicurezza Managing Director, Andrew Willdig, VP of Global Customers, Gunnebo Safe Storage and Tecnosicurezza founder Franco Miller

Outsight Announces Integration of 3D LiDAR Security with Genetec

The Genetec Security Center platform will now seamlessly integrate data processed by Outsight, regardless of the LiDAR device source. According to Raul Bravo, President Founder of Outsight, "We are immensely proud of this integration with Genetec Security Center. This collaboration not only provides seamless access to the unique technology of 3D perception by LiDAR to most companies in any country but also offers unparalleled freedom to customers, allowing them to select the best hardware and seamlessly combine sensors from various manufacturers. We're honored to be recognized as the right technology partner in LiDAR technology by such a forwardthinking organization." According to David Lenot, Director of Critical Infrastructure Practice: "At Genetec, we believe 3D LiDAR technology is going to be a key enabler for many industries to address security and safety challenges and improve operations efficiency. The capability of Outsight perception software being compatible with any hardware vendor offers a wide range of possibilities to meet the demand of customers".

www.genetec.com

Morse Watchmans: Virtual Law Enforcement HQ

Morse Watchmans' Virtual Law Enforcement HQ showcases key and asset control solutions. The interactive online headquarters allows visitors to browse a range of solutions based on various law enforcement applications. Morse Watchmans launched the Virtual Law Enforcement HQ (HQ), an interactive experience that demonstrates how the company's key control and asset management solutions can be applied within police agencies to create a verifiable chain of custody and facilitate heighted levels of security. "The Virtual Law Enforcement HQ provides a unique, dynamic platform to explore how our key control and asset management solutions can revolutionize security and accountability within their operations," said Tim Purpura, VP of Global Sales and Marketing, Morse Watchmans. "With this virtual experience, we aim to showcase how Morse Watchmans solutions support law enforcement in their mission to safeguard communities through innovative and reliable technology solutions."

www.morsewatchmans.com

Cias at Inter Airport Munich and Sicurezza Milano

Cias demonstrated how to take care of Security & Safety in Airports in these two important fairs. From October 10 to 13, visitors found Cias exhibiting at InterAirport Europe in Munich. Cias displayed their new lifesaving system for aircraft collision prevention Ermo 482X3Pro-Air. Many International airports already rely on Cias systems both to ensure optimal safety for aircraft and passengers using its infrastructure and for airport security in protection of their perimeter against dangerous intrusion. In November 15-17, Cias also showed their solutions at Sicurezza exhibition in Milan. This year Cias wanted to bring the visitor's attention to the most requested applications from the security market. During the three days of the fair, three hot verticals were on display: Airports, as said before, with Ermo 482X3PRO-AIR for aircraft ground control management; Photovoltaics, with the possibility to get in-depth information due to their broad experience on how to secure solar farms with microwave barriers and mems fence-mounted systems, and Pipelines, with the debut of Cias' new long-range fiber-optic system Apache Pipeline.





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Smart Building Expo 2023

Smart Building Expo, the home and building automation and technological integration event organised by Fiera Milano and Pentastudio, took place at Fiera Milano (Rho) from 15 to 17 November 2023, offering trade operators not only a rich exhibition programme, but also many valuable opportunities for training and getting up to date on an evolving sector. SBE's proposal can be summarised by two keywords: innovation and integration. Thanks to a growing offer (30% more companies compared to the last edition), the event showcased products, solutions, and technologies that today enable buildings and cities to evolve into a smart approach, transforming themselves from simple spaces into service providers - from health to education, entertainment, and mobility - offering a very important return in terms of energy efficiency, safety, comfort and sustainability. Smart Building Expo 2023 saw the debut of four Innovation Squares created with the support of associations and publishing companies to provide a vertical insight into markets revolving around the evolution of building and smart cities.

www.fieramilano.it

Tdsi at Intersec Saudi Arabia 2023

Integrated Access Control and Security manufacturer Tdsi showcased its Gardis Platform and talked about its new GardisVu VMS solution at Intersec Saudi Arabia 2023, which took place from 3-5 October at the Riyadh International Convention & Exhibition Center. Managing Director John Davies commented: "We are delighted to have had our forthcoming appearance at Intersec Saudi Arabia at the beginning of October. This was our first appearance at the show since the pandemic but follows up on a number of connections and conversations that we started back in June when we held our Security Technology Showcases in both Riyadh and Dammam. Tdsi has been selling products in Saudi Arabia since the 1990s and customers have benefitted from our integrated security systems on many different projects, but this event is the perfect opportunity to see our latest Gardis products and to learn more about the exciting possibilities they offer." www.tdsi.co.uk

Flir and Magos Partner in Perimeter Security

Teledyne Flir and Magos Systems announced a technology partnership to introduce an innovative end-to-end Perimeter Intrusion Detection System (PIDS). Together, they unveil the integration with Teledyne Flir's thermal security cameras and Magos' radar technology and AI software capabilities. This fusion creates a comprehensive system for detecting, classifying, and tracking potential threats under any weather and lighting conditions, even in complex and cluttered environments. "This partnership further solidifies our commitment to equipping security teams with solutions that empower them to protect their facilities and personnel in all conditions," said Matt Strautman, Director of Global Business Development - Security at Teledyne Flir. "Magos Systems' radar technology is renowned for its resolution and coverage in the security industry, making it an ideal complement to our expansive portfolio of perimeter protection solutions." www.magosys.com · www.flir.co.uk



Secutech April 2024: Strong Focus on Artificial Intelligence and IoT

The dates are set for the return of Secutech, Asia's ultimate business and technology platform for security, IoT and Al integration. Together with facial recognition, big data, 5G or cloud computing, these security technologies continue to advance at a rapid pace - and Secutech remains one of the most influential platforms to reflect these trends. The 25th edition will be held from 24 – 26 April 2024 at the Taipei Nangang Exhibition Centre. More than 300 local and international exhibitors will showcase their innovations across 15,120 sqm of exhibition space. Secutech is a very good place for the entire security supply chain to network and conduct business. Ms Regina Tsai, General Manager, Messe Frankfurt (HK) Ltd - Taiwan Branch, explains: "With more than 24 editions of experience, the fair is renowned as a technology platform for security, IoT and Al integration. Its connection across Asia attracts major security buyers and system integrators from both the public and private sector. It is a one stop platform for everything from total solution providers to component manufacturers, fostering cross-industry collaborations across information and communication technology, security, transportation, fire safety and the building industry through connected technologies."

www.messefrankfurt.com

Boon Edam's Secured Entry Symposium

Boon Edam, a manufacturer of secured entry solutions, hosted the Secured Entry Symposium on October 25th at the company's new technology center in Raleigh, NC. The event included exclusive training opportunities from event sponsors Assa Abloy, LifeSafety Power, and Motorola Solutions, as well as demonstrations of Boon Edam's latest secured entry solutions. Presentations by the director of business development at Assa Abloy, Derek Ommert as well as JC Powell of Boon Edam provided attendees with a look at contemporary solutions such as the Tourlock 180, a security revolving door that easily integrates with an access control system. The Speedlane Compact is the newest edition to the Boon Edam premium range of swing barrier optical turnstiles while the Circlelock Solo is the ultimate defense against intrusion into sensitive areas of a building. Insights on design as it relates to access control were given by Christian Colburn Motorola Solutions, discussing technologies tied to establishing, maintaining, and monitoring the secured entryway. www.boonedam.com

Wagner Successfully Closes Fiscal Year After Continued Growth

The Wagner Group, headquartered in Langenhagen near Hanover/Germany, closed the past financial year with an outstanding overall result following renewed Group growth. Despite the overall challenging global economic situation, the fire protection solutions provider was able to increase the Group's consolidated total output to EUR 123.4 million. This corresponds to growth of EUR 8.3 million or 7.2% compared to the previous year. The company, currently employing around 700 people worldwide, has thus grown continuously since it was founded in 1976 and once again exceeded its targets in the past fiscal year. According to Wagner, the success is based not only on disproportionate growth in the relevant foreign markets, but also on successful business in the core market of Germany. In recent years, the company has consistently pushed forward its internationalization strategy and, in addition to further market development within Europe, is currently focusing primarily on further strengthening its business in North America as well as the developing and expanding the fire protection portfolio in India and its neighboring countries. www.wagnergroup.com



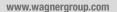
White Hackers Fail to Breach Idis' Cyber Defenses

Idis video technology's reputation for robust cybersecurity was given a further boost last month in a series of ethical hacking attempts at the ESS+ International Security Trade Fair in Bogotá, Columbia, which attracted over 15,000 visitors and 150 exhibitors. Idis was one of only three vendors willing to submit their technology for a public Video Security Product Hacking event and defeated all attempted attacks. There has been growing concern about the vulnerability of surveillance systems to malicious hacking in recent months, with several high profile breaches, and the broad nature of current cyber threats was reflected in the ten attack types featured in the tests: identification and enumeration of devices, port and service scanning, software vulnerability analysis, penetration testing, brute force testing, network protocol analysis, man-in-the-middle attack testing, denial of service (DoS) testing, privilege escalation testing, and data security testing. The Idis NDAA-compliant products subjected to attacks by professional ethical hackers. All Idis video technology benefits from multi-layered cyber protection. Idis DirectIP assures true plug-and-play connection of all devices with instant operability of cameras. NVRs ranging from 4 to 256 channels are protected by firewalls and twofactor authentication, eliminating complexity and the potential for human error associated with manual password handling of www.idisglobal.com multiple cameras.

Bernhard Weindl New Managing Director for Wagner Rail

Wagner Rail is complementing its management team as of October 1st, 2023. Together with Dr. Markus Müller and Dr. Peter Stahl, Bernhard Weindl will drive the expansion and further development of Wagner Rail GmbH as an additional managing director in the future. The industry specialist joins Wagner from Knorr-Bremse, where he was Sales Manager Japan in Tokyo and most recently Director Global Sales Hydraulics of Knorr-Bremse SfS GmbH in Munich. At Wagner, he succeeds Markus Kock, whose contract as Managing Director at Wagner Rail GmbH ends on March 31, 2024. Markus Kock, who has held the position as Managing Director of Wagner Deutschland GmbH since its foundation in 2020, will thus once again focus consistently on the further development of the core market Germany. Werner Wagner, founder and Managing Director of the Wagner Group, looks forward to the upcoming cooperation. With specific fire protection solutions for rail vehicles, Wag-

ner Rail was able to achieve an increase in performance of 16.7% in the past financial year compared to the same period of the previous year.





Werner Wagner with new Managing Director of Wagner Rail GmbH, Bernhard Weindl

Siemens Invests Over US\$500 Million for Critical Infrastructure

Siemens will invest more than US\$500 million in U.S. manufacturing for critical infrastructure in 2023. The investments support high-growth markets like data centers, batteries, semiconductors, EV charging and rail transportation. New is a US\$150 million investment in Dallas-Fort Worth production of critical electrical infrastructure equipment to help power U.S. data centers and accelerate the adoption of artificial intelligence. As part of these investments, Siemens announced a US\$220 million investment in a new rail manufacturing facility in Lexington, North Carolina, earlier this year. Production in Fort Worth is expected to start in 2024 where the factory will be built and operated using Siemens advanced manufacturing tools, including digital twin technology and high-tech automation to ensure the highest quality, efficiency and sustainability levels. The Siemens Xcelerator portfolio will be used to capture and analyze data from the shop floor on production and product performance in real time. www.siemens.com

www.GIT-SECURITY.com GIT SECURITY 4/2023 11

EVENT

Intersec 2024 Preview

The Silver Jubilee Edition of Intersec 2024: Commemorating 25-year Milestone Edition in the Region with a Record Number of Exhibitors

The organiser of Intersec 2024, the leading trade fair for safety, security, and fire protection, is preparing to host the largest edition in the show's 25-year history. Taking place from 16-18 January 2024 at Dubai World Trade Centre (DWTC), under the theme of 'Innovating security tech for a quarter century', the exhibition is expecting a remarkable 20 per cent year-on-year increase in international exhibitor participation, and more than 45,000 trade visitors from around the world travelling to attend the event.

eld under the patronage of His Highness Sheikh Mansoor Bin Mohammed bin Rashid Al Maktoum, the silver jubilee edition of Intersec will host 1,000 exhibitors from more than 60 nations, with around a quarter of these appearing for the first time. Occupying 13 halls at DWTC, the exhibition signifies a 20 per cent growth compared to 2023, reaffirming its status as a critical networking hub for global security, safety, and fire protection industries. Uniting buyers, sellers, and decision makers, Intersec provides a dynamic nexus for networking, deal-making, and the global unveiling of cutting-edge technology and innovations in Dubai.



UAE Government Entities Demonstrating Commitment

In particular, every element of Intersec is affiliated with the relevant UAE government entities, demonstrating the commitment of the UAE Government to these important industries. Dubai Police and the Security Industry Regulatory Authority (SIRA) are affiliated with the security sector; Dubai Civil Defence with the Fire & Rescue element of Intersec; while Dubai Municipality supports the safety sector and the Cyber Security Council and Dubai Electronic Security Center (DESC) underscore the importance of the cyber sector.

2024 Edition: Innovation, Digital Security and the Security Leaders' Summit (ISLS)

This year, innovation and digital security will take centre stage at Intersec 2024 as security and safety professionals from around the world look to collaborate, innovate and actively seek new technologies to meet the industry's rapidly changing needs.

Alex Nicholl, Group Commercial Director at Intersec organiser Messe Frankfurt Middle East, said: "With two months to the largest edition of Intersec, we look forward to providing a platform for bringing the leading industry players together for three days of discovery, networking, knowledge sharing and most of all, driving the industry forward."

In addition to exhibitor showcases, Intersec 2024 will continue to set the stage for a safer and more secure world with the return of its high-impact conference programmes, including the exclusive Security Leaders' Summit (ISLS) exploring trends in sustainable security and geopolitical risk intelligence, the Cyber Security Conference, hosted by the UAE Cybersecurity Council, delving into metaverse security and Zero Trust Architecture, and the Safety & Health Conference emphasising workplace safety and well-being.

Fire & Rescue Conference Hosted by Dubai Civil Defence

Meanwhile, the Fire & Rescue Conference, hosted by Dubai Civil Defence, will discuss strategies and best practices across topics such as emergency response planning, fire safety and compliance and community engagement. At the same time, the Thought Leadership Pavilion, hosted by the Access Control Executive Brief, will address a range of topics across a central theme of the future of the access control and smart lock industry.

"These conferences and workshops serve as the intellectual heartbeat of Intersec, providing a platform where pressing issues are dissected, innovative solutions are unveiled, and the seeds of progress are sown," added Nicholl.

The event's diverse features encompass the Drone Threats & Counter Measures Workshop, the Emergency Crisis Management & Communication Workshop, live demonstrations in the Attack Zone, a catwalk show of industrial safety gear at the Safety Walk and the Future Defenders Hack Arena, for students and professionals. Moreover, the Intersec Awards will recognise outstanding achievements across key sectors, and The Premium Club will provide a key networking programme for industry professionals.

The 25th edition of Intersec will encompass five broad product sections: Commercial & Perimeter Security, Homeland Security & Policing, Fire & Rescue, Safety & Health, and Cyber Security, offering tailored solutions for each industry segment under one roof.

CONTACT

Intersec

www.intersecexpo.com

Messe Frankfurt Middle East www.ae.messefrankfurt.com



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altronix.com



Light + Building 2024

A Symbiosis of Lighting and Connected Buildingservices Technology

Modern building-services technology stands for efficient energy usage, individual improvements in the levels of comfort and convenience, as well as all-round safety and security. Lighting is an elementary building block of the built-up world. It not only sets visual accents and, under ideal circumstances, combines aesthetically with the architecture but also provides functional benefits. Light + Building in Frankfurt, Germany, from 3 to 8 March 2024 covers the spectrum from intelligent lighting technology to future-oriented home and building technology.

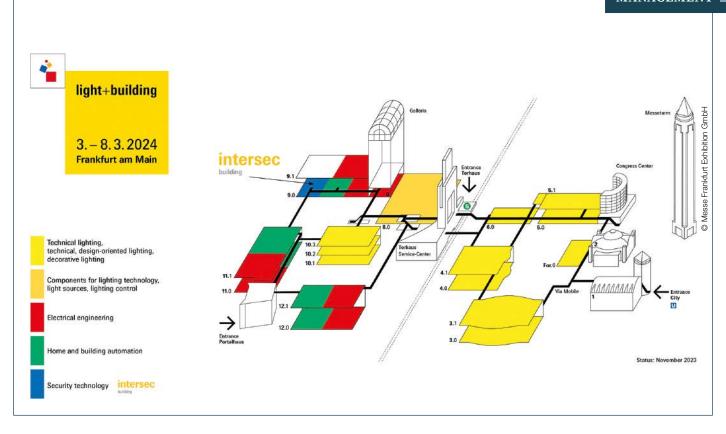
Thanks to this unrivalled combination, the world's leading trade fair for lighting and building-services technology is the foremost international meeting place for experts, manufacturers, planners, architects and investors, all of whom take advantage of this innovation show to discover future-oriented solutions. Additionally, the focus is on the exchange of knowledge, making new business and gaining inspiration. "Light + Building is the ideal platform to find the latest developments and enter into a dialogue with experts from the international sector. Nowhere else is this direct combination of lighting expertise and forward-looking home and building-services technology to be found", says Light + Building Director Johannes Möller.

As the leading platform for the sector, Light + Building spotlights the subjects that have a decisive impact on the exhibiting companies. "The way in which people live, work and interact in towns and in buildings is changing continuously. Therefore, tomorrow's building-services technology must be able to adapt to the changing and varying demands placed on it. We need interfaces for new sources of energy, the systems must be interoperable and efficient operation should be a matter of course in terms of emissions and economic efficiency", explains Johannes Möller. Electrification represents the foundation stone for greater sustainability and a building sector capable of

meeting future demands. Accordingly, the motto of the world's leading trade fair in 2024 is 'Be Electrified'. Based on this motto, three top themes – 'Sustainability', 'Connectivity' and 'Work + Living' – specify the factors set to be essential for living, working and mobility in tomorrow's world. Throughout Light + Building, they constitute the common thread for lectures, guided tours and special shows.

Reflecting the Sector: The Top Themes

- The 'Sustainability' theme revolves around systems and approaches that contribute to making the building sector more economically and environmentally viable, i.e., the integration and storage of green energy and an efficient energy management. However, sustainability also plays an important role in both the materials used and the manufacturing process.
- The 'Connectivity' theme also contributes to the efficient use of resources. Thus, electrification and digitalisation are the basis for successfully interconnecting the various disciplines of the smart home and the smart building and, in the product life cycle of a building, begins at the planning stage using Building Information Modelling (BIM). The collection and storage of data makes it possible to control and maintain the functions of a



building efficiently during use, resulting in a higher level of comfort and, in particular, greater safety and security.

The 'Work + Living' theme deals with the changing demands on mobility and where we live and work, as well as production and sales areas and the urban context. Whether working remotely from home or meeting places for social interaction in an industrial building, tomorrow's smart home and the smart buildings are planned to make both possible. A special focus is placed on the topic of light and lighting in all its facets. Here, innovative technology is combined with trend-setting design for more comfort. Trends in all their aspects play an important role here. They influence the design of luminaires and design elements in buildings.

Building-services Technology Meets Networked Safety and Security

Innovative building-services technology for a sustainable future is shown by exhibitors in the western section of the exhibition centre. There, the manufacturers' portfolios include not only components for the electrification and digitalisation of the infrastructure but also technology for the automation of home and building-services technology. This forms the basis for the integration of alternative sources of energy and ensures an efficient use of resources. Networked safety and security is an integral part of smart homes and smart buildings, and this is why Light + Building is concentrating this range of products and services in the Intersec Building

segment, which includes everything from video technology and access control to data and fire protection.

Over 2,000 exhibitors at Light + Building 2024

The countdown is on with around four months to go before the doors open on the world's leading trade fair for lighting and building-services technology in Frankfurt am Main. The event is already proving to be very popular. To date, more than 2,000 national and international exhibitors have registered to present their innovations to a wide audience of trade visitors. They include numerous market leaders who will be showing their latest products for the fields of lighting, electrical engineering, home and building automation and networked safety and security technology.

The next Light + Building will be held as usual in the early spring and registrations have already been received from more than 2,000 exhibitors. After Germany, the best represented nations to date include Italy, Turkey, Spain, Poland, the Netherlands, Great Britain, France, Belgium, Greece and China. "There is a high level of interest in taking part again in 2024, on both the lighting and building sides. We are delighted about the many loyal customers who took part in the last edition of the fair, as well as about a whole series of returning exhibitors. They all ensure that Light + Building is the unrivalled, international highlight for the lighting and building-technology sectors", says Johannes Möller, Head of Light + Building Brand Management."

Safety and Security

Light + Building is covering the whole spectrum of intelligent lighting solutions at Frankfurt Fair and Exhibition Centre. For our readers hall 4.1 is especially interesting, as visitors will find not only lighting for industry and special applications but also emergency and safety lighting.

Trends for electrical engineering and home and building automation will be the focus of attention in Halls 9, 11 and 12, where many of the sector's key players have already confirmed their participation in the fair. The safety and security technology segment has also been expanded under the heading 'Intersec Building' and can be found in Hall 9.0. Among the exhibitors there showing solutions for connected safety and security technology will be Abus, BKS, Dom, Gretsch Unitas, Grothe and Winkhaus. In addition, the range of products and services for electrical engineering, house and building technology continues in Hall 9.0. Here, Bacnet, EnOcean, frogblue, Loytec, Megger, Thermokon and Woertz show their innovative products.

A provisional list of Light + Building exhibitors registered to date can be found at www.light-building.com/contactor.

CONTACT

Messe Frankfurt Exhibition www.light-building.messefrankfurt.com

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EVENT

International Security Expo 2023 Review

GIT SECURITY Looks at Selected Exhibitors and Gives an Overall Impression of ISE 2023

Almost 10,000 security professionals from 70 countries attended the International Security Expo (ISE) and the co-located International Cyber Expo at London's Olympia exhibition centre over two days in late September. Packed theatres had standing room only, whilst busy exhibitor stands showcased the latest technological innovations for the safeguarding of people, businesses, national borders and critical national infrastructure. ISE 2024 will be held at the Olympia exhibition centre on 24th to 25th September 2024.

or the second year running, delegates benefited from a keynote address by the UK Minister of State for Security, Tom Tugendhat MP, in which he discussed the UK's counter-terrorism strategy and the security challenges posed by current conflicts in Ukraine and the Middle East, whilst laying out the British Government's own security priorities.

International Security Conference and Summits

The ISE event as a whole provided highly informative content of interest to the wider

world. That included presentations delivered as part of the Global Counter Terror and Serious and Organised Crime Summit, alongside the International Security Conference and the International Risk and Resilience Conference.

The Counter Terror and Crime Summit included talks by representatives of the police-hosted National Counter Terrorism Security Office (NaCTSO), the Office for Homeland Security, and UK Defence and Security Exports (UKDSE, itself part of the Department for Business and Trade), alongside the likes of the Global Initiative

Against Transnational Organized Crime (GI-TOC) and Microsoft.

Counter-Threat Demonstrations

Live counter-threat demonstrations during ISE included how a robot is deployed to deal with an improved explosive device (IED) and how resilient physical security products survive LPCB attack testing. The British Transport Police's Special Response Unit demonstrated equipment capable of detecting and assessing powders, liquids and gases, in addition to the X-ray of suspicious packages.



Avon Barrier's EB950CR Armstrong barrier

GIT SECURITY's Personal Review

Upon arriving at Olympia London, visitors saw hostile vehicle mitigation (HVM) barriers outside the entrance provided by SafeCrowds and were required to pass their bags through Rapiscan's Orion 920CX X-ray scanner. Many exhibitors were seen unveiling their latest innovations, sharing new technologies with UK and international buyers. Accordingly, GIT SECURITY's Top Twelve exhibition stands are highlighted below.

Airports, Security Scanners and Screening Technology

The next-generation screening technology, the Falcon Human Security Scanner, was found at the Apstec Systems stand, headquartered in Stockholm. This advanced system is able to screen people, bags and wheeled luggage for explosives, weapons, pyrotechnics, narcotics and cash, whether hidden on people or in baggage. By streamlining the process of screening large numbers of individuals and their belongings via a single system, the Falcon makes screening operations for difficult-to-secure crowded locations such as mass transport, sports stadia and national borders easier.

Scanna MSC of Regent Street, London is a British manufacturer of X-ray inspection and detection equipment, specialising in portable and postroom security X-ray solutions. Its ruggedised, waterproof, flat panel X-ray systems work with low-dose X-rays and are ideal for security spot checks in defence, police, transport and customs applications.

Linev Systems UK of Ramsgate, Kent used the ISE event to launch its Clearpass CI partial body scanner. This is described as the perfect solution for prisons and borders, as well as for many other areas where people scanning is needed to check for stuffed or swallowed contraband, featuring rapid image acquisition and scan times.

The company's ScanMax 225 mailroom security X-ray scanner produces clear, definition-rich, X-ray images of mail, courier and baggage items, to allow operators to quickly and easily distinguish between legitimate and malicious or prohibited

Raptor HVM bollards from Heald



GEUTEBRUCK Smartphone as a surveillance camera



https://info.geutebrueck.com/ en/smartphoneconnect



Self-raking Armaweave fencing from Zaun

items. The units themselves are slimline, making them ideal for even the smallest postroom area. The ScanMax 225 has a simple pushbutton operation which generates a clear X-ray image within just a few seconds.

Next up, the TR-6545 from Todd Research in rural Cambridgeshire is a cost-effective and reliable X-ray inspection system built with a narrow frame and large tunnel dimensions that enable it to screen a wide range of bags and parcels at checkpoints with limited space. With a powerful generator, the TR-6545 provides crisp, high-resolution images.

The AeroSentry Zero for airspace managers from Drone Defence is designed to monitor compliant aircraft and drones. The sensor receives data via ADS-B feed, as well as remote ID, with the sensor being compliant with ASTM F3411-22 standards. Drone detection is effective up to a distance of 3km.

A famous name in aviation and airport security, 30,000 Leidos people and baggage scanners are deployed across 130 countries. Shown at ISE 2023, ProVision2 with automatic target detection quickly screens passengers using safe mm-wave technology to automatically detect concealed objects made of a wide variety of materials, whether metallic or non-metallic.

Barriers, Fences, and Shutter Doors

Avon Barrier of Bristol, a member of the Perimeter Protection Group, majored on its EB950CR Armstrong barrier. This is a high-security rising arm barrier that has been PAS 68 impact-rated and offers a high level of protection where central roadway foundations are neither possible nor practical. The drop arm barrier can withstand direct impact forces in excess of 720 KJ and provides shallow-mounted protection to sites from extreme Vehicle-Borne Improvised Explosive Device (VBIED) attack.

Exporting to over 50 countries, Clark Door of Carlisle impressed us with their MultiGard security roller shutter doors, SR3, SR4 and SR5. Design features include thermal insulation, an auto self-locking mechanism, and smooth and quiet operation. The Clark MultiGard has a unique lath design, achieving high wind ratings without the need for additional wind end locks. All models are available up to 8m wide x 10m high.

From Hornsea, East Yorkshire, Heald's Matador sliding bollard is a patented security system, crash-tested to different IWA standards. During crash testing, not only did the sliding bollard system arrest the test vehicle with a zero penetration rating, it continued to function following the impact without any repairs.

Also from Heald comes the Raptor, a patented retractable security bollard crash tested to both PAS 68 and ASTM standards. Following crash testing, the Raptor achieved a zero-penetration result and operated after impact. Heald's Raptor combines the high security of a road blocker with the flexibility of a shallow-mount bollard. In testing the Raptor has halted a 7.5-tonne truck travelling at 80 kph/50 mph.

Among its products, Zaun Fencing of Wolverhampton, demonstrated its Armaweave self-raking woven mesh fencing. ArmaWeave offers an increased level of protection against scaling since it has reduced climbing points. Furthermore, the self-raking feature reduces installation time and costs on site. This is possible by reducing the civil works for additional posts for stepping, no installation of cut or reduced-sized panels, and no pre-measuring of angles.

Intrusion Detection

Meanwhile Optex was launching the latest in LiDAR technology. As an innovator of LiDAR for security, Optex has developed a revolutionary new LiDAR solution, the Redscan Mini-Pro.

This provides extremely accurate LiDAR detection combined with a built-in FHD

Mentioned Exhibitors

www.apstecsystems.com
www.avon-barrier.com
www.clarkdoor.com
www.dronedefence.co.uk
www.heald.uk.com
www.leidos.com
https://linevsystems.uk
www.optex-europe.com
www.scanna-msc.com
www.toddresearch.co.uk
www.videosoftglobal.com
www.zaun.co.uk

camera to give the ultimate intrusion solution. Suitable for a wide range of indoor and outdoor high-security applications, the Redscan Mini-Pro can detect threats proactively with pinpoint accuracy, being unaffected by lighting, temperature or weather conditions.

Video Security

Videosoft Global was displaying ultra-low bandwith video encoders, rugged, secure and with high-efficiency video adaptive compression technology.

The Videosoft FireBird F-100, designed for low bandwidth video transmission from 4kbps, can stream a camera's native output when viewing HD wide-angle cameras for the highest level of detail in frames per second. The F-100 is recommended as the ultimate in compact, deployable surveillance solutions for the police, homeland security, critical national infrastructure, defence and CCTV applications.

Co-located Cyber Expo

Meanwhile, across the same two days in the adjacent Olympia National Hall, visitors could move into the world of cyber security. In just its second year, the co-located International Cyber Expo saw almost 6,500 visitors come through the doors, 35% more than last year. The Global Cyber Summit saw cyber experts providing updates on this critical and rapidly changing area.

The International Security Expo and International Cyber Expo will return to London's famous Olympia exhibition centre on 24th to 25th September 2024.

Author: Oliver Haines

CONTACT

International Security Expo www.internationalsecurityexpo.com

Viisights Integrates with Eagle Eye Networks

Bringing real-time behavioral video analytics to the cloud, Viisights announces a technology integration with Eagle Eye Networks. This seamless integration combines Viisights' state-of-the-art behavioral video analytics technology with the Eagle Eye Cloud VMS (video management system). "By combining the power of the Eagle Eye Cloud VMS with viisights' behavioral analytics, we're ushering in a new era of real-time threat detection in the cloud," said Asaf Birenzvieg, CEO, Viisights. "This integration empowers businesses that use cloud video management systems with the tools they need to proactively address security and safety concerns wherever they are, widening the reach of our next-gen analytics and delivering true, real-time awareness." The integration leverages the strengths of both companies to provide customers with cutting-edge solutions for enhanced security and business intelligence. The Eagle Eye Cloud VMS is trusted by organizations worldwide. www.viisights.com · www.een.com

Guide Rail Door Closers

Door closers equipped with Assa Abloy's Cam-Motion technology guarantee ergonomic and convenient opening for everyone. Unlike traditional rack and pinion guide rail systems, these guide rail door closers need a pushforce that falls rapidly.



They exceed the recommendations of CEN/TR 15894 by mirroring the power of the human elbow, where torque also reduces sharply as the arm extends. To meet the recommendations of this technical report, door closers must offer a rapidly decreasing opening force. The force a user must apply should reduce by 40% when an opening angle of 60° is reached. This creates a much more comfortable opening experience without sacrificing the force required to close properly to meet other safety standards. The door closers also offer optional closing delay, giving users extra time to pass through. Compliance with CEN/ TR 15894 gives architects, building managers and users confidence that a building design makes occupants safer, paying special attention to children, the elderly and the disabled. To protect the frame and prevent banging into walls, there is a backcheck function as standard across the range that slows the door's final opening section. The symmetric cam design allows fitting to either the frame or the door, and on either the hinge or the non-hinge side - no compromises or installer workarounds are needed. A range of models can equip both single and double-leaf doors. While meeting these important accessibility criteria, the door closers do not sacrifice durability or fire resistance. All Assa Abloy Cam-Motion devices are tested to EN 1154 standard for fire and smoke protection. Optional built-in smoke detectors and electromechanical closing can offer enhanced protection. www.assaabloyopeningsolutions.com





GIT SECURITY AWARD The Winners of 2024

It has been decided: the winners for the GIT SECURITY AWARD 2024 were chosen by readers, market participants, fans and partners. The first three places on the podium can be admired and applauded in seven categories. GIT SECURITY has been awarding the prize for innovative, economical or defining products, solutions or services in the industry since 2005. Participants have to compete against each other in several hurdles. Companies can register for the award at www.security-award.com until March 31st of each year. A neutral jury then nominates the finalists in each category. In the final step, the community chooses their favorites. Important: Employees are not allowed to vote for their own product. The GIT SECURITY editorial team congratulates - and shows the current winners of the respective categories here and on the following pages. Congratulations!

Category A • Machine & Plant Safety



Firewall with Optional IDS/IPS Module

To preempt ever-present cyberthreats, Moxa combines OT-centric firewall capabilities (EDR-G9010 Series) with MXsecurity management to help detect cyberthreats and prevent them, ensuring secure and continuous operations (Modbus TCP/UDP, DNP3, IEC 60870-5-104, and IEC 61850 MMS traffic filtering). The 10-port full Gigabit secure router of the EDR-9010 Series is capable of firewall/NAT/ VPN/switch/IPS functions, extends deep packet inspection to more OT protocols, contains the latest security intelligence, and supports virtual patching to mitigate identified threats. MXsecurity helps track network defense using real-time dashboards. The software translates OT-specific threat intelligence into visible defense intelligence and security management for better protection, detection, and reaction to cyberthreats.

SICK: safeVisionary2

3D Time-of-Flight Camera with Safety Certification

One of the first 3D time-of-flight camera with Performance Level c safety certification increases the safety and efficiency of AGVs/AMRs and collaborative robots through safe three-dimensional environment detection. In addition, the camera also reliably solves automation tasks thanks to precise 3D measurement data, saving the need for additional hardware components. safeVisionary2 has a compact, robust design and can be used in a versatile and reliable manner in everyday industrial applications. In addition, the user benefits from a high level of user-friendliness. This saves considerable time during installation and configuration.





Meister Automation: Multialert mini

Fire Protection Control for Control Cabinets and Machine Plants

Fires break out in companies in Germany every 5 minutes. A defective electrical system is a frequent cause of fires. AMFE, the VdS-approved mini fire extinguisher, detects and extinguishes fires in control cabinets. For larger or multiple control cabinets, several AMFE extinguishers are required that are triggered simultaneously. This is handled by the Multialert mini control unit. The Multialert mini is operated directly inside the control cabinet at 24 volts, and will integrate into the fire detection systems on site. Depending on the requirements, it combines AMFEs and smoke detectors. In addition, it can use audio-visual signals to draw attention to the fire and report it to superordinate systems. After triggering, the system itself is ready for use again via an integrated reset.

Category B • Occupational Safety and Health & Explosion Protection



Uvex: Pronamic Alpine Mips

Safety Helmet with Mips Safety System

To significantly improve safety, Uvex has developed the Uvex pronamic alpine Mips, a new safety helmet in cooperation with the Swedish company Mips. The Mips technology integrated into the helmet makes a decisive contribution to reducing rotational forces when objects hit the helmet off-center or at an angle, and thus the strain on the brain. As a result, concussion or even brain damage can be significantly reduced. The Uvex pronamic alpine Mips is also certified according to EN397 (industry) and EN12492 (construction sites).

A clear development goal was also to integrate all functional elements (ventilation, Mips safety system) into the helmet design in a form-fitting manner. Wearing comfort was also a decisive factor in the development, so that the helmet can be optimally adjusted to the respective head geometry (size range from 51 to 63cm).

Cemo: Li-Safe

Battery Safety Storage and Charging Cabinet

The battery storage and charging cabinet Li-Safe stands for comprehensive protection against burning lithium-ion batteries. For the first time, the cabinet offers not only fire protection but also explosion protection, tested according to the latest/highest test standard of the TÜV Nord Cert. It thus ensures greater safety during operation – e. g. when storing and charging batteries for power tools or e-bikes. Thanks to an innovative integrated pressure relief system, it can be ruled out that the doors of a typical gas explosion open unintentionally, what will invalidate any protective function of the cabinet. So far, fire resistance alone was considered as enough. Nevertheless, an MPA-tested fire resistance of 60 minutes (inside to outside) and fire tests with e-bike batteries form the basis. 3-fold stackable, compactness for quick evacuation and electrical alarm systems are also standard. Two cabinet sizes, each with 4 equipment variants, offer solutions ranging from entry-level requirements to professional applications with SMS alarm to cell phone.





Phoenix Contact: Mini Analog Pro

Compact Ex i-signal Conditioners with SIL 3

The intrinsically safe variants of the well-known Mini Analog Pro 6.2 mm signal conditioner-family set new standards in miniaturization: The products offer reliable signal transmission, intrinsically safe (Ex i) explosion protection and functional safety in a unique compactness of overall width and height. The products are consistently rated to the highest safety level, SIL 3 one out of one. Despite the small design, the user benefits from particularly user-friendly housing and operating concept, a wide range of parameterization options and consistent digitization (via App, clipX Engineer or DIP-switches). Due to the wide operating temperature range from -40°C to 70°C and a documented altitude application range of up to 5000 meters, Mini Analog Pro can also be used under extreme environmental conditions.

GIT SECURITY 20 Years

GIT SECURITY is relevant

for us, because it always offers interesting project reports and valuable insights from the security industry.

Jan Meiswinkel CEO and CO-Founder Advancis



GIT SECURITY is relevant

for us, because it stands out as one of the premier portals in the field of Security and Safety at the international level. Our visibility in this esteemed journal has played a key role in seizing new business opportunities, facilitating our international expansion process.

Raffaele di Crosta | CEO Ksenia



GIT SECURITY is relevant

for us, because of its high quality, respected coverage of the dynamics and players of the EMEA security market. ONVIF has valued its relationship with GIT over the last 15 years to bring ONVIF news and perspective to this important audience.

Leo Levit,
Chairman, ONVIF Steering



GIT SECURITY is relevant

for us, because it is a wellestablished platform to bring installers, customers and manufacturers together to find solutions to the current and future challenges in physical security.

> Thomas Dallmeier CEO, Dallmeier



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Category C · Video Security & Video Management



Bosch Building Technologies: Autodome 7100i (IR) Cameras

Deep Learning Video Analytics for City Surveillance and Traffic Monitoring

Autodome 7100i (IR) cameras are high performance 40x PTZ cameras with excellent starlight imaging technology and high dynamic range. Built-in IVA Pro brings highly reliable deep-learning based detection of persons and vehicles to scenes ranging from sterile zones to crowded and congested. They are a highly accurate and reliable solution thanks to a closed-loop drive platform. The cameras feature IVA Pro, an expert suite of application-specific video analytics offering reliable, precise classification for city surveillance, traffic monitoring and long-distance perimeter detection.

Dallmeier: PlanD

Camera Planning Tool

The camera planning tool PlanD takes an approach that is unique in the industry: With PlanD, installers, partners and even end customers can create professional camera plans independently, playfully and without 3D software knowledge. In just a few minutes, users can draw in buildings, place cameras, detect shadows and also adjust fields of view intuitively and live thanks to 3D Camera View. In this way, PlanD revolutionizes the planning process: a completely new user

experience is created and customers can be involved live in the planning process. The intuitive user guidance, interactive collaboration and direct feedback significantly accelerate the planning phase of an entire project.





Senstar: Senstar Symphony

Sensor Fusion

The Senstar Symphony Common Operating Platform with Sensor Fusion is not only an open, highly scalable video management system with integrated video analytics, but it also includes full-featured modules for access control and perimeter detection system support.

In short, the Senstar Symphony Common Operating Platform with Sensor Fusion is a fully comprehensive modular solution for security management and data intelligence. The newly developed sensor fusion engine adds a module to the Symphony platform that makes it possible to link perimeter detection systems and video cameras at an unprecedented level. Sensor fusion makes intruder detection enormously accurate. Processing unnecessary false alarms is now a thing of the past.

Category D · Access Control & Intruder Alarm





Ksenia: micro poli

Wireless Multifunction Sensor

The product micro poli is a wireless multifunction sensor for burglary protection, designed and developed by Ksenia Security. It implements the wireless bidirectional 868 MHz protocol used by all models of lares 4.0 control panels. The two Reed contacts inside the transmitter make the installation of the sensor extremely easy permitting to choose which of the two magnets to use. Thanks to the embedded 3-axis accelerometer based on MEMs technology, micro poli is also an inertial sensor to detect vibrations and breaking of glass and windows. Finally, by using magnetic anti-masking, it is able to identify the inclination of the frame it protects, allowing the management of any type of window opening.

Genetec: Axis Powered by Genetec Controller with Access Software

Axis Powered by Genetec combines a powerful hardware access controller and Synergis access control software into one product. Normally, information about who is requesting access is routed through the access control system from a card reader. It goes through multiple levels of controllers to a central server. With Axis Powered by Genetec, software is already pre-installed on the controller. It matches the request with the list of authorizations and then access is either granted or denied. Axis Powered by Genetec doesn't require local PC hardware to store access permissions. The controller can be connected via the network to a central computer at any location.





Telenot: histar Dual 1012

Infrared Microwave Motion Detector

The histar Dual 1012 infrared microwave motion detector is designed for monitoring indoor areas for intrusion. It detects infrared heat radiation via its mirror optics and also has an integrated microwave sensor. At 12 meters, the monitoring range of the histar Dual is 20 percent larger than comparable detector types for room monitoring. The detector is approved for VdS class B, as well as EN50131:grade 2 or in the AM version with additional cover and undervoltage monitoring incl. wall breakaway protection

according to VdS class C or EN50131:grade 3. The histar Dual detectors can be used in all current Telenot intrusion detection systems. The shapely design blends inconspicuously into the room design. The detector uses innovative microprocessor-controlled signal processing with new Snap technology (Selective neuron algorithm with power management) in combination with a hitherto unique digital pyroelement. This enables excellent false alarm security and outstanding detection characteristics.

Category E • Building Safety & Perimeter Protection

Advancis: WinGuard X5 Open Integration Platform

The open integration platform WinGuard X5 controls all security, building management and information technology systems via a unified user interface. Dynamic workflows (SOPs) support the operator in event processing. X5 is based on the new Advancis Open Platform (AOP) – a software platform allowing to easily create modular as well as scalable applications. With AOP and a modern API, i.e. a programming interface, the user can extend the system with own functionalities, interfaces as well as individual user interface (UI) elements. Thus, there are hardly any limits to the use of own components in WinGuard.



Dedrone: DedroneCity **City-Wide Drone Detection**

Drones are getting faster, cheaper and able to carry bigger payloads. As a consequence, traditional perimeter security, while essential, no longer suffices to keep people, airports and critical infrastructure safe. Dedrone's City-Wide Drone Detection Service solves this issue in an easy to implement manner. Both public and private entities can easily access and use DedroneCity, which monitors drones across wide geographical areas to provide real-time notification drones with a pilot's GPS location and drone data, when alert zones are breached. DedroneCity requires no additional equipment nor installation, and already exists in 40 major cities around the world including New York City, Los Angeles, and Barcelona.



Hikvision: Stand Alone Thermal Camera **Solar Powered Camera**

Hikvision's solar-powered thermal cameras are designed for use in areas where power and network cables cannot reach. The features: Thermal camera and AI enable reliable person and vehicle detection. Power and network independent - with solar panel, battery and 4G modem for flexible installation. Intelligent power management -

monitoring in 24/7 continuous operation or power saving mode. It comes with a robust and weatherproof housing - water (IP67) and wind (Beaufort scale up to 12).



Mobotix: M73 Thermal Camera with App

Fire Early Warning System

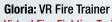
Especially in the waste management/recycling and logistics sectors, large outdoor areas with bulk materials or halls with high ceilings make fire protection difficult. Mobotix thermal imaging technology detects fire sources without contact by capturing critical temperature thresholds - often before a fire even starts. The weatherproof M73 camera can be upgraded to a thermal image-based fire early warning system without the need for an additional server by adding an easy-to-install VGA thermal sensor module and activating the Thermal Validation App already integrated in the camera firmware. Where fire detection systems such as smoke extraction systems or linear heat detectors maybe reach their physical limits, the Mobotix thermal imaging system shows its strengths.

Category F • Fire Protection

Ajax: Ajax FireProtect 2

Fire Detector

The detector FireProtect 2 has a dust-proof smoke chamber, a dual-spectrum optical smoke sensor, two A1R thermistors and a CO chemical sensor, and versions with sealed (10 years) and replaceable batteries (up to 7 years). Interconnect feature allows all fire detectors at the facility to activate sirens as one of them detects a threat. The detector is configured in an app and complies with EN 14604, EN 50291, and Q mark. A circulation mechanism provides the optical sensor with an unobstructed field to quickly identify products of combustion in the air. Also, the smoke chamber does not require regular cleaning, which simplifies the detector's maintenance.



Virtual Fire Fighting Training

The VR Fire Trainer enables a new kind of firefighting training in the virtual world. The product consists of a virtual reality headset and a dummy fire extinguisher. Using the VR headset, users enter different virtual environments and are guided through realistic exercises that simulate various fire scenarios.

Additional functions such as fire spread, smoke development and material deflammability enable an unprecedented degree of reality. Both the deployment and the use of the VR Fire Trainer require no prior technical knowledge or time-consuming instruction. The exercises are designed to be almost intuitive and feedback is generated immediately after the

training. No fire extinguishing agents are used. This makes the VR Fire Trainer a sustainable option.



Special Category • Sustainability

Dallmeier Components: Camera Mast

Sustainable In Full Length

The Dallmeier Components 6th generation camera mast not only convinces with its special features for perimeter protection, but also with its sustainability. The camera mast is made of 100% aluminum and therefore weighs two thirds less than a camera mast made of galvanised steel. The lighter weight reduces carbon emissions and saves energy during transport and installation. The light metal's resistance to corrosion means it lasts longer and requires less maintenance, reducing resource consumption and environmental impact. The camera mast is also 100% recyclable, as it is 100% remelted and the aluminum can be reused without any loss of quality. This reduces the need for valuable raw materials.

Siemens: Security Manager **Cloud Application With People Counting**

Flexible working models cause the following problem for canteens: irregular attendance makes it difficult to plan portions. Consequence: too much food is prepared and wasted. The Siemens cloudsupported security solution provides a remedy. An access control solution registers when someone gains access to the building complex. This event serves as the basis for people counting and can also be stored on the cloud. A canteen staff member can access this information in Security Manager on an easy-to-understand real-time dashboard at any time and thus see how many people are on the premises. This allows for better estimation of portions to prevent food waste.



GOALS

Salto: SDGs by United Nations

Commitment to Sustainability

Salto Systems has committed to helping achieve the 17 Sustainable Development Goals (SDGs) as defined by the United Nations (U.N.) General Assembly. The manufacturer of electronic access control solutions is doing several things to help achieve these SDG goals. Many of the goals are specific to environmental sustainability, such as climate change, sustainable operations, responsible consumption, and product eco-design. Salto takes this very seriously and has achieved ISO 14001 certification (since 2011) and becoming 100% carbon neutral (since 2020) – a significant step in making keyless smart access technology sustainable.

CORPORATE SECURITY

Strength Through Dialog

A Conversation with Volker Buss, Chief Security Officer of the Merck Group

The modern form of company security is no longer just a 'knight with a raised sword who is protecting the castle', says Volker Buss, who has been the Chief Security Officer at the Merck Group for three years. Rather you have to develop a security strategy together with the respective business unit of the company and in a dialog with that business unit. Matthias Erler of GIT SECURITY spoke with Volker Buss.



Volker Buss, Chief Security Officer at Merck Group

compendium will be available this fall.

Tablets are covered with a film that is sprayed on by fine jets

GIT SECURITY: Mr. Buss, before we come to your responsibilities as Chief Security Officer at Merck Group: you are just finishing writing a book together with other authors that is concerned with the security of family businesses. Could you give us a little sneak preview ...?

Volker Buss: The book is a compendium that I have put together with Hans-Walter Borries, the deputy president of the

German national association for the protection of critical infrastructure (BSKI), for the Family Businesses and Politics Foundation. In the book, we look at the changing security environment that will present companies with some new challenges in the future, and look at the aspects of business continuity management (BCM) as well as emergency and crisis management. I won't give away too much, but I will say that the

The subject is close to you - you are also a member and advisor of the foundation you just mentioned, the Family Businesses and Politics Foundation. What is your role there?

Volker Buss: I consider myself very lucky to have been part of the foundation's security advisory group since the beginning and I am also proud to be a founding member. We have gathered a committee of experts that discusses current security matters and challenges during regular meetings and provides members of the foundation with a platform to turn to on matters of security.

What were your most important career steps before you came to Merck, and how long have you been working for

Volker Buss: The various activities during my 20-year career as a police officer have certainly been the most influential. After that, I started working in the private sector with the Würth Group. I am grateful to this day to the company and those responsible for the opportunity I was given to develop. It was a time of learning that was very helpful to me. After my time there, I moved to Merck where I have been the CSO for almost the past three years.

In your opinion and your philosophy, what is particularly important for company security, and how does that differ from traditional opinions?

Volker Buss: We are business enablers and ambassadors for security-relevant matters. I feel that the role that company security has played in the past is out of date. It is not my aim to perform a purely governing

www.GIT-SECURITY.com GIT SECURITY 4/2023 25 function that makes rules, or be the knight with a raised sword who is protecting the castle

My opinion and my philosophy is rather to develop a security strategy together with the business units based on their needs that will protect and maintain their business in the long-term. I am of the opinion that, through discussion with the business units, we are in a position to develop tailor-made, efficient and effective standards that can actually be implemented by those business units. In addition, we get to understand the business much better through this conversation and have the opportunity to identify sticking points that had not been not apparent either to us nor to our colleagues until that time so that we can solve them together.

Of course, we do not ignore the normal requirements of legal regulations or classic asset protection. I am delighted each time we are involved in business matters from the start, or we are asked to provide advice. That is the proof for me that corporate security at Merck is not just tolerated, but is accepted and that our philosophy and approach is not so wrong.

Among your latest projects is the bringing together of all security aspects under one roof, that is, into your department. It is called 'reboot cyber', and has above all to do with removing the separation of general and IT or cyber security ...

Volker Buss: The discussion on the question of to which department cybersecurity should be assigned has been going on for ages and there are many differing opinions. We have decided to centralize information security in one department. We have bundled the information protection and cybersecurity within corporate security into a new CISO organization, and support these now from one point. The 'Cyber Security Operations Center' was also part of the transformation, as were our colleagues in the Security Software Applications depart-

Staff in a research laboratory in St. Louis, USA

ment. All this gives us the advantage that we can address these subjects as a whole and from one point. In addition, we use the synergy effects of the non-cyber activities, for example in risk management, incident/emergency management and security auditing, to name just a few.

My view is that separating the security measures into a digital and an analog world, or in non-cyber und cyber makes no sense because they still overlap, are dependent upon one another, or complement each other. A by-product of this decision and its implementation is that it has helped us to fulfill the requirements of the IT security regulations for operators of critical infrastructure, and with a view to the forthcoming general Kritis law, I believe we have at least already laid the foundation stone to be able to carry out the resulting measures.

How do you rate the current security situation for a company such as Merck with its global presence? How is information acquisition organized at Merck?

Volker Buss: I believe we are more or less constantly exposed to latent danger, just like other DAX companies. For sure, our business makes us active in a somewhat critically-viewed environment, and also in one where our knowledge and R&D is of interest to one or the other protagonist. We know this, and have corresponding active security measures, such as information gathering. To answer your question, on the one hand we employ analysts within corporate security who constantly inform us about the current situation. We also use information from the well-known commercial protection sources, from the authorities as well as associations and federations, and also analyze trade literature such as GIT SECURITY.

Product security – above all the illegal copying of medicines – is a special subject for Merck. What are these imitations, what is the scale of the problem, and where do the counterfeiters usually come from?

Volker Buss: We have a particular responsibility as manufacturers of medicines to our customers, the patients. For that reason, patient safety is one of our main concerns, also within Corporate Security. With regard to the type of counterfeit products, we are faced with a wide spectrum of forgeries ranging from copied packaging up to total fake medicine. It is sometimes shocking to see just how unscrupulous the forgers can be just



Measurement in a production facility for special chemicals in Darmstadt, Germany

to make a profit. You will understand that I cannot go into detail here, but the cost of the damage runs into millions worldwide, leaving aside the risks and danger to the patients. Copying medicines is a worldwide criminal phenomenon. We have established that the main locations for this activity are established in Asia and South America.

How does your department help with this, what strategy do you follow and what effective measures do you have at your disposal?

Volker Buss: In my department, we are responsible for the investigation of product crime. This includes being the spokesperson for the investigating authorities, but also researching and finding the perpetrators ourselves. We are also involved in projects of the business units in which, for example, new security markings are designed for the packaging. Another example would be systems that make the uninterrupted tracking of medicines from production to end user possible.

How far can this sort of criminality be prevented?

Volker Buss: Preventive work here is very difficult. We train the security authorities on our products to help them identify forgeries. We also screen and monitor the market for potentially forged products or for perpetrator groups so as to intervene at an early stage. We are also involved in a worldwide network of pharmaceutical manufacturers through which current investigations and new phenomena are distributed.

Merck is a company with a big emphasis on research. Could you give us an idea how the security strategy works in this part of the company?

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Volker Buss: Our aim is naturally to prevent any flow of information on current research work to the outside. We therefore have systems in place that monitor and prevent this. We also have a comprehensive training program on how to manage data and information within the company that makes our employees aware of the correct way to handle such data and also the dangers that abound. Basically, we follow a 'no trust' strategy for this.

You also fall under the heading of 'critical infrastructure'. This means that you are affected by the new Kritis legislation that we mentioned previously. What does that mean for Merck?

Volker Buss: At the present time, parts of our production facility are already subject to these regulations and these are regularly audited by the BSI (Federal Office for Information Security). The scope will be extended however to a large part of our entire company when the Kritis legislation comes into force, which means we will have to react and implement the legislated and necessary measures. We are very interested to know to what extent we will have to change things, but one thing is sure: it means a lot of work and some new challenges for us – let's see what happens.



Staff testing a robot control system in the production facility in Jaffrey, USA

You are also in a Bitcom working group on this subject ...

Volker Buss: Bitcom for us is an important partner on this matter and we contribute to the exchange of information within the appropriate group that is currently dealing with this subject.

Mr Buss, you are currently concerned with business continuity management. What does that mean for your job and your department?

Volker Buss: That's right. My department is busy checking the existing BCM for com-

pleteness and effectiveness and, where necessary, setting and implementing the appropriate standards together with the business unit. For my department, we get to work much closer with the business units which helps us to understand their business and its requirements much better, and to support them as an adviser and partner. In addition, we can increase the influence we have on business decisions and create an awareness of all other security matters. This enables us to offer a comprehensive service that increases the resilience of the company and enables it to return to normal operation quickly and effectively if there is an interruption.

This area is certainly an integral element to security in the management of the company as a whole ...

Volker Buss: At Merck we are in the lucky position that corporate security is totally accepted and the work that we do and the necessity for such an organization is much appreciated. So at this point I would like to express my thanks to the directors and all other stakeholders in the company for their trust. Nevertheless, this increases our visibility again and emphasizes the added value that we can offer the company.

Do you have the impression that the reputation of security management has grown positively – also in view of the current crises?

Volker Buss: Definitely. The current crises have certainly contributed to the fact that security management is now viewed differently. But we all know that this is normally not a lasting thing – as soon as the crises have been overcome or gone away, the focus

will turn to other areas again. I have the feeling that this has now changed. I can see a change in the way people think about the subject of security: away from 'security is a cost factor that I have to pay for as a company and a brake tied to my leg' – over to 'security management is a full partner within the company that does its part in achieving the business goals and is therefore part of the value chain'.

Mr Buss, many thanks for the conversation.

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The Choice You Make

What is the Right Technology For 'Safe City' Video Surveillance?

The use of modern video technology in public spaces is increasingly gaining approval. Nevertheless, in many cases it is the first project of its kind for those responsible for its introduction, and it is often a complex task. Numerous elements need to be coordinated, and knowledge needs to be built up quickly. There are decisions to be made, approval procedures, public discussion, planning, identifying synergies and, last but not least, selecting the appropriate technology for a city surveillance project. This article intends to provide help with that decision.

o local politician would wish for a situation like the one that occurred in Cologne on New Year's Eve 2015. After terrible riots involving several hundred people, more than 1,200 charges were filed for breach of the peace, assault and sexual assault among other things. The fact that

there were only 46 court cases and just 33 convictions was due in part to the fact that the image quality of the recordings from the outdated video system did not allow any evidence to be used. Either the perpetrators could not be identified due to a lack of resolution, even if the course of the criminal

event was clearly recognizable, or potential perpetrators were easily recognizable, but the small images of many individual cameras often did not allow the events to be reconstructed in larger visual contexts, and it was therefore not possible to prove involvement in the crime beyond doubt.



facilities for example, a resolution density of 250 px/m ('Identify' according to DIN EN 62676-4) or more is usually required for the images to be reliably usable in court. In simple terms, this is the value at which a judge can say with a high degree of probability that the person sitting in front of him and the person in the video image are identical, or not. This must be possible even under poor lighting conditions. Since this value must apply across the board and must not fall below a certain minimum value, it is also referred to as the 'minimum resolution density'.

of urban surveillance, but also in sports

How Many Cameras Cover How Many Square Meters?

Once this resolution density has been determined for the entire area to be monitored, the camera requirements can be derived through pre-planning in cooperation with the manufacturer. Good planning simulates the entire environment as accurately as possible as a 'digital twin' and allows decision-makers to see and evaluate the exact pixel density coverage and camera views for all areas. This assists the planning that ensures both the fulfilment of the purpose of the surveillance – as required by the EU GDPR, for example – as well as efficient operation and maximum cost effectiveness.

So-called multifocal sensor camera systems are particularly suitable to fulfil these requirements. They combine the images from up to seven detail sensors and one overview sensor into one optical unit. The

individual images are combined by software to form an overall image and can cover very large areas. This method combines three distinct advantages: a much lower overall camera count that helps to reduce the total cost of ownership because a lot less infrastructure is needed and fewer operators are required to monitor the same area. The second advantage is a better overview: as the image is a combination of up to eight individual images, operators can see the entire scene in a much broader visual context. And thirdly, and very importantly, the entire image is always available in high resolution - both in live view and in the recording. Live operators and forensic analysts can zoom into this overview image indefinitely and view any details in high resolution.

Quality In – Quality Out: City Surveillance and AI

The capabilities – but also the limitations - of video analytics in urban surveillance are manifold and are therefore not the subject of this article. However, one principle that every decision-maker should consider: analysis technology is developing rapidly. It is advisable to stay 'on the ball' and watch the developments of the various analysis specialists. When selecting camera systems, pay attention to the highest possible constant image quality over the entire object space. After all, the quality of the analysis results can only ever be as good as the quality of the input data quality. With the right technology, one is then also well equipped for any future analysis applications.

Image Quality, Overview, Cost

Three key requirements can be derived from these and other experiences gained over many years of video surveillance in public spaces. The first is large-area coverage with minimum image quality that is as consistent as possible across the entire object space. The second point is the recognition of contexts: It should be possible to capture as large a part of the monitored space as possible in one image, or in other words, the number of cameras used should be as small as possible. Finally, the third point is, of course, cost: the two central selection criteria - comprehensive image quality and recognition of large contexts must be feasible at reasonable overall cost.

What does 'minimum resolution' actually mean and how is it relevant? How is image quality actually defined when monitoring large areas? The decisive factor for quality is the required resolution. This is referred to as 'resolution density' or 'pixel density', which is defined in the DIN EN 62676-4 standard. The unit 'pixel per meter' indicates how many pixels are available to represent 'one meter of reality'. In the field



The values for the minimum resolution specified in DIN EN 62676-4 are the basis for any planning. With conventional technology, the laws of physics apply at full force. With Panomera, a much more even distribution of the resolution across the entire object space can be achieved

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A Checklist of Cost Factors in City Surveillance

When calculating the total cost of a video technology solution, there are many more factors involved than the pure costs for the technical video components cameras, recording and software. Decision-makers would do well to calculate precisely and take into account as many cost drivers as possible.

- Consulting: how time-consuming? Free of charge or already associated with costs?
- The exact image quality requirements: what is the required minimum resolution density and for which areas? 125 px/m? 250 px/m?
- The number of cameras: how many cameras of which type are needed for how many square meters of area?
- The planning: how time-consuming is the planning, and which digital systems will be used? This has a direct impact on the speed of implementation and also on flexibility.
- The costs for infrastructure, including labor costs: are masts, civil engineering, cables, network technology required?
- The cost of installation: the total number of cameras required naturally plays a key role.
- The method of mounting: are there systems that make installation particularly expensive or particularly cheap?
- The configuration documents: to what extent can planning data be used directly during installation on site? Some manufacturers can generate installation documents directly from the plans.
- The cost of the technical components themselves: how much do cameras, recording systems or software components cost?
- The cost of ongoing maintenance: what about warranty, guarantee or 'all-inclusive' support contracts?
- The cost of operation: what are the labor costs for operators? How many operators are needed for which solution?
- The cost of unproductivity: how operatorfriendly are the solutions? How many camera images does each operator have to keep an eye on (usually a maximum of 6-8 images per operator is reasonable)? Conversely: how many person-hours does the respective solution require for active video observation?

Unfortunately, manufacturers or installers are still very often confronted with the question of 'cost per camera' in consulting discussions or tenders. But decision-makers are well advised to consider modern video

Conventional cameras (Static single sensor cameras +PTZs)

Multifocal sensor camera systems

The number of camera systems required can vary greatly depending on the technology used – with major implications for infrastructure, operating and maintenance costs. Shown here using the example of Cologne Cathedral Square: each yellow dot is a mounting point. In the proposal on the left, well over 100 cameras are used; in the concept on the right – which was ultimately installed – there are just eight multifocal sensor systems covering just under 9,000 square meters with at least 250 px/m

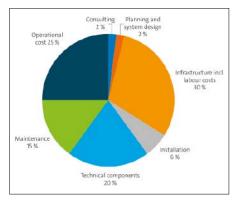


Multifocal sensor technology is particularly well suited for urban surveillance: even in complex locations, a high-resolution overall view is always available, even in recording. At the same time, operators can open a theoretically unlimited number of detail zooms in parallel ('virtual PTZs')

security systems as whole solutions consisting of various components such as cameras, software, recording systems, services and operation costs. There are significant differences in the efficiency of operation, the infrastructure costs or even the effort required for installation and deployment between the systems that are on the market, due to the nature of video technology.

It is therefore always advisable to take a close look at the total cost (the total cost of ownership), which takes into account all cost aspects of a solution from initial planning all the way through to ongoing operation. Decision-makers should pay particular attention to ensuring that all the elements of a project are considered together.

The invitations to tender for the video system and the construction and infrastructure work are often issued separately. Under certain circumstances, this can lead to a significant distortion of the total costs, for example if cameras are less expensive to purchase but the infrastructure and installation costs required for them are significantly higher than in a comparative bid. This is frequently the case when it comes to mounting points such as masts, cabling,



When using video technology, there are many more cost factors than the pure costs for the technical video components of cameras, recording and software

digging or other building activities. Finally, the principle of the most economical and not just the cheapest bid also applies to public tenders. The first project in city surveillance will then also work out well for the city and policy decision-makers – and result in more security for the citizens with maximum cost efficiency.

Practical Advice: Thoughts on Privacy

A Beginner's Mistake: Privacy as the Enemy

In many urban surveillance projects, data protection commissioners are often perceived as 'opponents' and are kept out of the decision-making process for too long for fear of possible resistance. However, the opposite is often the case: the earlier the data protection officers are involved – ideally already at the planning stage – the more positive the reaction, and the supposed opponent often becomes a supporter.

Touch a Video System

Categorical rejection is often simply due to uncertainty and a lack of knowledge. If you take people's interests seriously and inform those involved at an early stage, for example by involving one or more manufacturers, you can increase understanding and transparency. A live demonstration of a test installation of the future system often helps, such as in the city council, at a citizens' meeting or at an information event.

Special Requirements Demand Special Solutions

In some countries – such as Germany – video surveillance equipment in public places must be visibly disabled for participants at legal rallies. This can be done 'traditionally' and elaborately with very high costs involved using cherry pickers and covering cameras with cloth bags, for example. However, there are also remotely controllable solutions that allow the incident commander to visibly deactivate the recording with just a few mouse clicks. And above all, the systems can be reactivated just as quickly if the situation changes.



Demonstrating the planned video system once is a tried and tested, but far too rarely used method of breaking down prejudices and resistance and providing factual information



Required in some countries: easily recognizable deactivation of video surveillance. Some vendors offer this 'at the click of a mouse'



Download Dallmeier's Safe City Brochure here: https://bit.ly/3SL0WtY



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The Big GIT System Test

Independent Test of Systems for Perimeter Protection

GIT System Test Video Analytics (GSTVA)
GIT System Test Perimeter Protection (GSTPP)

Dear Reader,

Last autumn, our test of video systems for perimeter protection caused quite a stir. In cooperation with the security expert office Markus Piendl and the system house i-Alarmsysteme, we subjected eleven systems to intensive test scenarios for the first time in the GIT System Test Video Analytics - not in the laboratory, but in the field and under practical conditions.

The response to this test from the market, the GIT community, print readers and online users was exceptionally positive. We would like to thank them very much for this. Decision-makers for security - on the operator side from all parts of the economy and authorities as well as from system integrators, installers and building and planning companies - have in turn thanked us for the valuable information, which had not been found anywhere else in this depth until now.



We have listened and tried to incorporate these suggestions in the new edition. Much of this has been incorporated into the implementation of this year's tests, even if some of the advice and wishes went in contrary directions. We are already working on further points for the next tests.

We directly followed the suggestions of operators and manufacturers of perimeter protection systems that do not work with video systems. They expressed a need for an additional test that is not based on video analytics. So this year, in parallel to the second edition of the GIT System Test Video Analytics, we organised and conducted another series of tests - the GIT System Test Perimeter Protection, in which we challenge the effect of radar, LiDAR, light barriers and PIR systems to protect a perimeter using the same demanding test scenarios. Can systems from both tests be compared? In the detection result perhaps, in the practical application only to a limited extent, as you will discover when reading carefully.

In this report you will learn more about the background of the two tests. You will learn how the tests were carried out and which providers achieved which results with which systems. Many thousands of data sets and analyses had to be sifted and sorted - after dozens of scenarios were applied several times. The result in this issue is intended to provide you as a planning company, operator, insurance company, installer, or decision-maker for security-relevant investments with the best possible basis for deciding which systems are particularly suitable for exactly your requirements.

If you miss systems that were not included in our current test, please also take a supplementary look at the test results from 2022 (see: https://www.git-security.com/news/git-system-test-video-analytics-test-results).

The entire test team would also like to thank all manufacturers who took part in the 2022 and 2023 tests. It takes a fair amount of decision-making power and confidence in one's own systems to face up to the effort and results of independent tests.

Pithy advertising slogans such as "100% detection", "no false alarms", "years of experience", "market leader", "AI-based solution" do not always correspond to the facts. Quote from a reader's opinion: "Those who shy away from comparison are perhaps not quite so convinced of their solution after all."

When looking at the test results, you should bear in mind that our experts always attach the greatest importance to the fact that we actually put the systems through intense testing in a neutral manner. All tested scenarios correspond to reality from real cases of damage at home and abroad, and some of them were deliberately set up to be very demanding. The reason: perpetrator behaviour also continues to develop - and it is also a matter of being one step ahead in each case. Detection rates of 50% in practice can be classified much higher than 100% in the brochure text based on self-tests.

Do you have further questions or suggestions for additional tests? Then please contact us by sending an e-mail to GIT-GS@Wiley.com.

We wish you an insightful and informative read, which – we are quite sure – will be of great benefit to you!

Your test team from SMP, i-Alarmsysteme and Wiley, GIT SECURITY/GIT SECURITY EMEA



Practical Perimeter Protection

No matter what methods and systems are used, perimeter protection is essential for securing buildings and even more so critical infrastructure. Intelligently deployed systems can significantly improve security in such environments and reduce costs at the same time - be it at the car dealership around the corner or the energy provider on the outskirts of town. Security personnel and operators want to be alerted immediately when something suspicious actually happens, but they do not want to be distracted by false alarms if possible.

Regardless of the technology used, there is basically only one way to determine whether a system provides the required protection: A comprehensive test in a real environment conducted by experienced professionals.

When it comes to selecting security products and systems for perimeter protection projects, end users, security installers and system integrators have very often had to rely on their previous experience or on the information provided by the vendors. With our first GIT System Test Video Analytics, Wiley and GIT SECURITY were able to

provide detailed background information on systems as a neutral authority. This is exactly what we have now deepened with the new tests.

Partnership of GIT SECURITY/ GIT SICHERHEIT with SMP and i-Alarmsysteme

As an experienced and independent authority, the expert office Markus Piendl (SMP) was again our partner for the coordination of the tests. SMP has worked on perimeter protection projects for end users, insurance companies or system integrators in more than 1950 projects.

Markus Piendl from Munich is known as an expert in security technology, prevention and perimeter protection. He is a recognised specialist in Germany and abroad for expert opinions in the security industry and a manufacturer-independent expert with proven experience. His Austrian colleague, Ing. Hannes Dopler, Msc from Bad Sauerbrunn in Austria, is involved in the tests with just as much experience. Dopler also supervises international projects and is also a court-certified and sworn

expert with extensive experience in defence technology and security projects.

As last year, Wiley and SMP had a very competent technical service provider at their side in i-Alarmsysteme. i-Alarmsysteme acted as the on-site security installer, coordinated by Managing Director Martin Embacher and IT and Marketing Manager Kathrin Karner. The company was responsible for the entire logistics and installation and provided the staff for the professional installation and acceptance of the systems.

Participating in the new edition of the GIT System Test Video Analytics were:

Hanwha Vision, Hikvision, Johnson Controls (Tyco), Senstar, as well as a manufacturer who only wanted to have his system tested for internal product development.

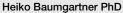
The GIT System Test Perimeter Protection was joined by Optex and Sorhea plus two manufacturers who wanted to run the test for internal research.



Test Results 2022









Miryam Reubold and Steffen Ebert

The organising team on the part of Wiley/

The Test

The Challenge

Both the manufacturers of the video systems in the GIT System Test Video Analytics and the participants in the GIT System Perimeter Protection were faced with the task of securing the precisely defined, tenmetre-wide and 102-metre-long test area.

The video systems for the GIT System Test Video Analytics were mounted on a fixed container. The area in front of it was to be secured against the intrusion of people from 20 metres from the installation up to a maximum distance of 102 metres. The systems in the GIT System Test Perimeter Protection were installed on the container or at the edge of the test area.

The assignment for the manufacturers was to install their systems in coopera-

tion with i-Alarmsysteme, to commission, configure and parameterise their system in order to pass the tests successfully. During the tests, a total of 105 scenarios were carried out, based on known perpetrator behaviour and certified test procedures of national as well as international organisations. We recreated real perpetrator behaviour, which is known to the

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security authorities and the test team from projects in Germany and abroad, in these scenarios, according to the motto "From practice - for practice". The evaluation of the systems was carried out from the perspective of an employee in an security service control centre. The alarm messages of each individual system were registered and documented in a Jablotron intruder alarm centre.

The manufacturers were left to choose and configure their systems. In the GIT System Test Video Analytics, manufacturers were allowed to use a maximum of three sensors, and all combinations of day/night cameras and thermal camera/heat imaging camera were allowed. The exclusive use of thermal cameras/thermal imaging cameras or day/night cameras was also permitted. In both tests, only cameras/lenses or detection systems that are not

exclusively intended for police/military services and that can also be purchased for civilian purposes were permitted.

The Test Site

The test site was again located in Weikersdorf am Steinfelde in Lower Austria (Austria). In contrast to the previous year, only the orientation of the test was rotated by 180 degrees to enable undisturbed detection in the maximum distance range and to minimise interference. The focus of the tests was to secure the test site in an area from 20 metres from the installation to a maximum distance of 102 metres. There were three different virtual distance ranges in the test area for carrying out the test scenarios. These were designated Alpha 30-50 metres (Green Zone), Bravo 51-80 metres (Yellow Zone) and Charlie 81-102 metres (Red Zone).

All the technology was housed in an airconditioned control room container with a central power supply. The control room container was equipped with a dedicated internet connection.

Infrared lighting was used on site to support the video systems; two IR illuminators from Raytec of type VAR2-IPPOE-HY8-1 and VAR2-IPPOE-i6-1 were used. The VAR2-IPPOE-HY8-1 is a hybrid illuminator that can switch to white light in the event of an alarm, with an IR range of 290 metres and a white light range of 144 metres. The VAR2-IPPOE-i6-1, with a light range of 120 metres (IR) and a beam spread of 35°x10°, was ideal for illuminating our test site. Any IR lighting that was an integral part of the camera systems was switched off.

Test Execution and Test Scenarios

In the control room container, one alarm input per manufacturer's system was switched to the intrusion detection centre for both tests this year and the alarm messages of each individual system were registered there. This means: The results of the test scenarios were documented - afterwards, the test manager recorded whether an alarm was indicated or not.

The test scenarios were based on known test requirements, test procedures and guidelines. They were changed and modified or underpinned with various disturbance criteria where Wiley, i-Alarmsysteme and SMP were of the opinion that test points

or requirements of various guidelines were not up to date or were not considered useful in reality.

The real-world test criteria and scenarios recreate the range of different offender groups that could be considered for critical infrastructure as well as system-relevant terrain sections or sophisticated security installations.

The scenarios were divided evenly between the different distance ranges (Alpha, Bravo and Charlie). Potential interference criteria were deployed at different distances. Each test scenario was run three times and is considered to have passed

overall as soon as at least two out of three runs resulted in an alarm message.

Test Groups

The intrusion tests were divided into different scenarios and scenario groups. Different types of movement were varied, i.e. approaches were carried out at different speeds, angles and rhythms. Different types of clothing and camouflage were used in further variations, which were evaluated separately. The test period extended over several days until deep into the night. The exact days and times were not communicated to the manufacturers in advance.

Among the 105 scenarios tested during day and night were trials with different types of movement, approaches and speeds.











Scenarios with jamming and camouflage methods were tested by day and night

Some test scenarios involved destabilising or deceiving the systems, e.g. by using special pyrotechnics.

It was also tested how the systems react to different environmental conditions and whether this could be exploited by perpetrators, such as the impact of animals, trash on the test field and weather-related influences.

At this point it is important to mention that the test scenarios were not carried out in a hall and the different weather conditions (strong wind on two test days and temperatures between 12 and 25 degrees celsius) had an influence on the tests, but were the same for all systems. This increases the realism and makes the results of the tests even more meaningful.

False Alarms (NAR/FAR)

Information on false alarms (NAR/FAR) was included in the reporting. This is intended to encourage manufacturers to carry out a realistic parameterisation and not to

make any settings of the video analysis systems that are too sensitive or not in line with actual practice. For this purpose, we observed the incoming alarms outside the three test days over 29 days and evaluated the number of alarms in the "rest phase".

Perpetrator Groups/Sabotage/ Manipulation

In some test scenarios, special emphasis was placed on the deliberate sabotage of the systems by well-trained perpetrators with experience. In these sabotage attempts, various techniques are used to disrupt, manipulate or irritate the systems in order to overcome the perimeter without triggering the alarm or to cause no clear detection. In a few scenarios, it was also tested whether the systems perceive manipulation without an intrusion attempt being made. The difference to the interference and environment criteria lies in the deliberate action of overriding the system. It was also important to us to detect

a manipulation or disturbance as early as possible, because this can possibly provide informative insights in a real incident.

In designing the tests, we assumed the following classes of perpetrators:

- Spontaneous offenders
- Petty criminals
- Planning criminals
- Professionals
- Terrorists

Physical attacks on the systems (e.g. by force) and hacker attacks were not carried out.

- Among the 105 scenarios tested during day and night were trials with different types of movement, approaches and speeds.
- Scenarios with disturbing influences and camouflage methods were tested by day and night







The Candidates and their Systems



Equal conditions for all systems mounted on the test container by the manufacturers.

GIT System Test Video Analytics

Hanwha Vision

For Hanwha Vision, the GIT System Test Video Analytics was a first and the Korean manufacturer decided to use a system of three sensors: two day/night cameras and one thermal camera.

The Hanwha TNO-4050T thermal network camera in bullet form provided thermal images in 640 x 480 resolution at a frame rate of 30fps. The IP66- and NEMAX4X-certified housing and the extensive audio and video analysis functions qualify the camera for outdoor applications in perimeter protection. In addition to the thermal camera, two optical sensors were used in the test: The XNP-6400RW camera with full HD resolution, 40x zoom and auto-focus is ideal for long-distance surveillance with adaptive IR illumination with a range of up to 200m and was complemented by the 6 MP camera XNV-8093R. The new X-Series cameras use AI to recognise and classify people, vehicles, faces, number plates and more in real time. The cameras' deep-learning algorithms can

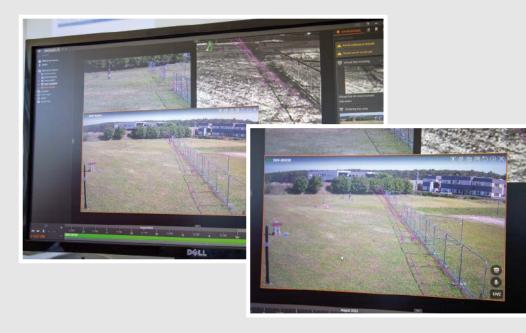






reliably identify multiple different objects and use AI-based image optimisation and efficient WiseStream III bandwidth reduction to focus maximum video quality on the detected objects in a scene.

Edge-based video analysis in the test was provided by Hanwha Vision IVA (Intelligent Video Analysis), which was pixel-based on the thermal camera, and AI-based video analysis with object detection was used on the XNP/XNV cameras.



Hikvision

After Hikvision successfully participated in the last GIT System Test Video Analytics with two systems, one thermal and one day/night camera, this year the bi-spectral network speed dome camera DS-2TD4167-25/W was used. This camera has both an optical sensor and a thermal camera module and has a special perimeter protection function. This is based on an intelligent algorithm: line crossing, intrusion, entrance and exit of an area are detected. The camera's intelligent tracking links the thermal and optical views.

The thermal module has a resolution of 640×512 pixels and the optical module provides 4 MP images.

In the test, the camera used Hikvision's VCA 2.0 video analytics to generate reliable alarms. VCA 2.0 is an intelligent technology for analysing video content based on deep learning algorithms. It detects targets and classifies them as persons or vehicles while filtering out the others. The analysis works pixel- and object-based directly on the camera, on the edge.







Johnson Controls (Tyco)

Johnson Controls entered the GIT System Test Video Analytics for internal use only with three optical cameras, each monitoring one of the three distance areas. The Illustra (JCI) Pro Gen4 PTZ camera, with 1920 x 1080 resolution, provided security for the rear area of the site. The exceptional speed of this Illustra Pro PTZ camera, combined with extremely low latency, enables accurate tracking of objects in mission-critical applications. The camera uses zoom-adaptive program technology to automatically control pan and tilt speed in proportion to the zoom being used, providing precise pan and tilt control. An Illustra (JCI) Pro Gen4 2MP mini dome camera, also with 1920x1080 resolution, was used for each of the two front areas of the test site. These cameras provide a lot of intelligence on the edge, i.e. directly on the camera, and have builtin AI-based object classification.

The Illustra AI on the cameras works object-oriented directly on the camera and was responsible for the video analysis. It provides intelligent perimeter protection, i.e. detection of objects that stay along a perimeter for a certain period of time or cross a perimeter to enter a protected area.





Senstar

For the GIT System Test Video Analytics, Senstar used the thermal camera Axis Q1951-E in the variant with the 13 mm lens and the optical sensor Axis P1377-LE 5MP camera as sensors. Both camera types are optimally suited for the intended for the intended test detection ranges.

Senstar has selected these two different sensor types in the test in order to demonstrate the performance of new video analysis models that the manufacturer is currently developing, and to test it in the very challenging scenarios of GIT System Test Video Analytics. The video footage during the tests is used by Senstar to automatically train its Deep Neural Networks video analytics, which is due to appear in version 8.7 of its video management system Symphony video management system. This is a new object-oriented AI-based video analysis, that uses neural networks to better recognise and classify objects. In addition, the false alarm rate is to be reduced to a minimum. The video analysis is expected to be available as a native server-based analysis function for the Senstar Symphony video management system in the spring of 2024 and was switched to a pre-release version of this VMS in our test.



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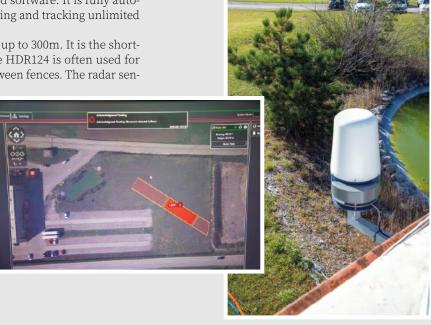
GIT System Test Perimeter Protection

Navtech Radar

Navtech Radar was at the GIT System Test Perimeter Protection with its wide area security solution, AdvanceGuard. AdvanceGuard combines high-resolution, longrange radar sensors and intelligent rules-based software. It is fully automated and designed for complex active sites, detecting and tracking unlimited targets inside and outside the perimeter.

The HDR124 radar sensor has a detection range of up to 300m. It is the short-estrange sensor in the HDR series, up to 3km. The HDR124 is often used for highprecision small areas, such as sterile zones between fences. The radar sen-

sor was installed on a pole by the side of the test container. The simple integration gave operators a comprehensive overview of the situation at the test site through a single interface. On this occasion, it displayed three detection zones, but AdvanceGuard can be configured with several alarm zones with independent rules, including direction of travel and threat levels. The simple integration gave operators a comprehensive overview of the situation at the test site through a single interface. AdvanceGuard displayed three detection zones in the test where the intrusion was detected and indicated.





Professional solutions for video surveillance

EIZO's high-performance IP decoding solutions are designed for the computerless display of video streams. They are built for 24/7 operation and characterized by highest reliability and durability.

- Alert-to-Action see what you need, when you need it
- Data protection through live streaming without storage
- Failover function in case of VMS stream failure
- Low installation and maintenance effort
- Choose between monitors with integrated decoder or a flexible decoding box



Sorhea

Sorhea participated in the GIT System Test Perimeter Protection with the Maxiris 3100 active infrared light barrier. The active infrared barrier consists of transmitter cells that emit beams of invisible infrared light and receiver cells that detect the beams and analyse whether they have been received correctly. In this way, the active infrared barriers form an immaterial wall and if one or more beams are interrupted, the system triggers an alarm. The Maxiris infrared barriers offer the highest level of performance of Sorhea products in this field and can be connected via an RS485 bus for long perimeters, as well as connected directly to a TCP/IP network via a hub. Thanks to the "zoning" function, up to three virtual detection zones (length configurable) can be set up per barrier, optimising the control of PTZ cameras via the video system (alarm information per zone). In our test, the light barrier was installed parallel to the test area and fence on the outer boundary of the test field.



Optex

Optex selected the RLS-50100V LiDAR detector for the GIT System Test Perimeter Protection. This long range LiDAR sensor is designed to detect intruders and moving objects in an area of 50×100 m without gaps, offering high detection resolution over the entire detection area and is intended as a solution for high security sites. The detection area can be divided into up to 8 independent zones, for each of which the target size, sensitivity and output can be adjusted. In our test, the system was deployed along the test field behind the perimeter fence.

One advantage of the sensor is that it has a built-in camera that can record alarm events and store logs and video sequences of the alarms on the unit. This makes it easier to verify what triggered an alarm. Camera support has also simplified installation and walk test. A laser line overlay in the camera view was a useful guide to where the detection area was. The video image was also displayed in the alarm centre, where the evaluation and alarming was based on the REDSCAN Pro firmware version 2.1.0. Integration can be done, for example, similar to an IP camera via ONVIF.



Test Results

Nuisance and False Alarms:

NAR/FAR Assessment

For the NAR/FAR evaluation, we observed the incoming alarms outside the three test days for 29 days and evaluated the number of alarms during this "rest phase". This was known to the manufacturers in advance, and it was intended to induce them to carry out a realistic parameterisation and not to make any overly sensitive or non-practical settings of the video analysis systems. In practice, all manufacturers have carried out a realistic setting of their systems, which has led to an acceptable false alarm rate. An exact evaluation of the NAR/FAR rating in the sense of an assessment of NAR/FAR per 100 m fence and day has not been carried out, but we have based our evaluation on these principals.

Operation

The assessment of the operation of the systems and their user-friendliness is based in each case on feedback from i-Alarmsysteme on the installation and parameterisation of the respective system and our experience during the test days. The experienced technicians gave us feedback on the installation, set-up, configuration and parameterisation of the systems. In addition, we looked at and evaluated the display of the systems in the control room: "How easy is it to operate the system and the cameras?", "How quickly could the system be installed?", "What training effort is required to be able to use the system in a targeted manner?", "How clear and concise is the display of incoming alarms, and how easy is it to view and evaluate the alarm history?"

Assessment of the Scenarios

A total of 105 scenarios were carried out on three test days during day and night, most of them with three runs. In the evaluation you can see the scenarios summarised in different blocks:

- Day/night evaluation
- Evaluation of the distance ranges: The category "distance" shows what influence the different distances have on the detection rate of the different scenarios.
- Clothing: It is evaluated what influence the different types of clothing have on the detection of the types of movement. The use of camouflage is also examined in this category. The extent to which specialised camouflage or camouflage

- devices have an influence on the detection rate was evaluated.
- Sabotage: The sabotage scenarios are not based on distance. Various known attempts at interference and sabotage were made and tested to see whether the systems trigger a tamper alarm or detect the intrusion despite the measures taken.

The various blocks of scenarios were evaluated as follows: From the number of scenarios carried out, the test scenarios evaluated as positive are evaluated as a percentage. This results in the rating in the criterion. This corresponds to the classic POD evaluation (probability of detection).

The implementers are aware that a scoring key always opens up room for



Overall evaluation: We have not made an overall evaluation of the systems, but have given the overall detection rate in percent for all scenarios. It is clear that many criteria play a role in deciding on a system and that the criteria we tested and described are only part of it. A system must always be individually adapted to the respective overall requirement and conditions.

Since the GIT System Test Video Analytics and the GIT System Test Perimeter are not intended to provide "perpetrator training", we have refrained in the following from a complete disclosure and description of the types of clothing, types of movement, means of camouflage and methods of deception or sabotage. The participating manufacturers, on the other hand, were subsequently informed in detail about these descriptions and individual scenarios in order to obtain a basis for the further improvement of their products.

discussion. The applied key is clear and simple and comprehensible for the different target groups of decision-makers. It is to be expected that decision-makers and customers usually decide on the basis of a sum of criteria - instead of solely on the basis of a value or a single criterion. All systems in the test were sufficiently efficient, none "failed" – and each system is suitable for very specific requirements. Our results provide a solid basis on which to have an informed conversation about the right security measure. So we can conclude that there are no losers in the GIT System Test Video Analytics and GIT System Test Perimeter Protection. Above all, we wish you a great gain in knowledge - and in security.

Ratings for FAR/NAR, Operation and Test Scenarios:

In the table, the percentage indicates the share of test scenarios rated as tested positive of all the test scenarios carried out in this category. The rating follows the same color code as the FAR/NAR and operation ratings.

Excellent
Highly recommended
Recommended
Conditionally recommended
Not recommended

GIT System Test Video Analytics

Hanwha Vision

At the test premiere, Hanwha Vision deliberately started with standard analysis software and a selection of cameras from the mid-price segment. The combination we tested from the Korean manufacturer, a thermal camera and two RGB cameras, delivered very good images and showed very good performance with all types of movement, as well as with all types of clothing tested. The performance during the day is even slightly better than at night. The setting used for the test resulted in relatively few false alarms. The sabotage detection is very neatly solved. The user interface is designed to be very user-friendly and the setup was quick.

Conclusion: A versatile option without weaknesses

Hanwha Vision	
Overall percentage of passed scenarios	79 %
FAR/NAR Evaluation	Recommended
Operation	Highly recommended
Daytime performance	87%
Nighttime performance	63%
Close range (Alpha)	94%
Medium range (Bravo)	70%
Distant range (Charlie)	75%
Apparel 1 (Streetwear)	83%
Apparel 2 (Camouflage & Ghillie)	78%
Sabotage	67%
Movement type 1 (walking upright)	82%
Movement type 2 (kneeing, lying or rolling)	77%

Hikvision

After Hikvision scored points at the last GIT System Test Video Analytics with two independent systems, a thermal imaging solution and a low-cost RGB camera, this time the manufacturer was at the start with a bi-spectral camera that has both an optical sensor and a thermal camera module. The performance of this camera system was convincing in all areas with top values and left nothing to be desired, neither in sabotage and camouflage scenarios nor in types of movement that are difficult to detect. The detection rate is pleasingly high both during the day and at night. Only the high NAR/FAR rate is to be criticised and the very sensitive setting has certainly also contributed to the top detection result.

Conclusion: Top model

Hikvision	
Overall percentage of passed scenarios	96%
FAR/NAR Evaluation	Conditionally recommended
Operation	Recommended
Daytime performance	97%
Nighttime performance	94%
Close range (Alpha)	94%
Medium range (Bravo)	100%
Distant range (Charlie)	94%
Apparel 1 (Streetwear)	100%
Apparel 2 (Camouflage & Ghillie)	94%
Sabotage	92%
Movement type 1 (walking upright)	99%
Movement type 2 (kneeing, lying or rolling)	93%

GIT System Test Perimeter Protection

Optex

Optex chose the LiDAR detector RLS-50100V for the GIT System Test Perimeter Protection. This was mounted on the side of the test site, i.e. at the height of the middle distance range, which is why a direct comparison of the results in the distance ranges with other tested systems is not useful. Over the entire detection range, the Optex solution showed excellent detection and this was independent of clothing type, time of day, camouflage and sabotage attempts. Even at low approaches, which are difficult to detect, the system was successful with very few false alarms. Operation is simple and the built-in camera provides usable images.

Conclusion: LiDAR is a trump card

Optex	
Overall percentage of passed scenarios	97%
FAR/NAR Evaluation	Highly recommended
Operation	Excellent
Daytime performance	96%
Nighttime performance	100%
Close range (Alpha)	97%
Medium range (Bravo)	100%
Distant range (Charlie)	94%
Apparel 1 (Streetwear)	100%
Apparel 2 (Camouflage & Ghillie)	96%
Sabotage	92%
Movement type 1 (walking upright)	97%
Movement type 2 (kneeing, lying or rolling)	97%

Sorhea

For Sorhea, an active infrared light barrier was the tool of choice to secure the perimeter we defined for the GIT System Test Perimeter Protection. The system triggered an alarm very reliably in the vast majority of scenarios, regardless of the type of clothing, time of day or camouflage. Unimpressed by many sabotage and camouflage methods, the system showed very few weaknesses. Only very low penetration attempts are not detected in a few cases, depending on the terrain and ground, but this does not detract from the system's top performance. The low NAR/FAR rate and the good user interface do the rest.

Conclusion: First-class protection

Sorhea	
Overall percentage of passed scenarios	88%
FAR/NAR Evaluation	Highly recommended
Operation	Highly recommended
Daytime performance	84%
Nighttime performance	91%
Close range (Alpha)	82%
Medium range (Bravo)	93%
Distant range (Charlie)	84%
Apparel 1 (Streetwear)	86%
Apparel 2 (Camouflage & Ghillie)	86%
Sabotage	100%
Movement type 1 (walking upright)	100%
Movement type 2 (kneeing, lying or rolling)	57%

Our Test Conclusion

Different approaches can lead to success

As seen in the first test, video-based systems can be a key element in perimeter protection. They can be used to monitor perimeters effectively and at limited financial cost. The tested systems show reasonable detection for standard requirements and a sterile perimeter and can be used in conjunction with other measures for perimeter protection. LIDAR, radar and photoelectric sensors serve this purpose to the same degree and the decision which type of system to select or even combine is not straightforward and must be decided on a project-by-project basis.

2. Improvements in video analysis are possible

While the resolution, image quality and low-light display of all the video systems tested are now consistently at a very high level, there is definitely still "room for improvement" in video analytics, i.e. in our case alarming. For example, the performance of some systems could be improved for complex camouflage and movement types. Sometimes, a better system adjustment to the local conditions can improve the performance. However, it may also be necessary to develop improved algorithms tailored to more demanding scenarios. Otherwise, a simple objectbased detection system will not recognize a rolling or crawling person as a person

and trigger an alarm, even with good settings.

Professional installation is as important as the quality of the systems

In addition to the quality of the video systems and software, a professional setup on site is also crucial and has a great influence on the results. The setting of the triggering criteria, adapted to the local conditions, the exact adjustment of the detection zones and distances, in addition to the quality of the systems, determine the success and the number of false alarms. Since the performance of the system may also depend on the experience of the commissioning team of the installation, the more extensive acceptance with scenario testing and fault measures is advisable.

High detection rates and the number of false alarms must be well balanced

For all systems used in perimeter protection, the user must decide where the focus of monitoring lies. Even for highly sensitive systems with sophisticated video analytics, the detection rate can be further increased by increasing sensitivity and turning off filters if more false alarms are accepted. All systems in the test that scored "Excellent" and "Highly Recommended" are therefore the first choice if the number of false alarms is important to the user.

More sensitive systems do not automatically produce more false alarms

The often expressed opinion that video analysis systems produce exponentially/disproportionately many false and unwanted alarms when detecting unconventional perpetrator patterns is not correct. Our test showed that, depending on the vendor, this need not be the case: the number of unwanted alarms increases, but neither exponentially nor disproportionately depending on the system used. The number of unwanted alarms and false alarms can also be reduced by maintaining the perimeter, e.g. regularly cutting back vegetation, reinforcing the manual fencing system, e.g. in case of deer crossing, by collecting garbage, but also by consistently installing approved (firmware) updates.

Combinations of different sensors increase security

Generally speaking, using multiple detection types can increase safety, especially if one technology can compensate for the weaknesses of the other. This can be done by using different video sensors (RGB and thermal cameras) or by adding completely different technologies such as the radars, LiDAR or photoelectric sensors tested in the GIT System Test Perimeter Protection. However, our test also showed that there are systems that show very good results with only one sensor. Provided that the user's

budget is not exceeded, however, a combination of thermal and RGB cameras and other sensors in particular can be the means of choice for effective perimeter protection.

7. Failing to prepare is preparing to fail

All decision-makers for security-relevant investments, all planners, installers, system integrators, insurers and operators are advised in any case to analyze their own needs in detail, if necessary supported by independent experts with experience. Based on a well-prepared analysis, it is easier to find the most suitable system for one's own requirements and circumstances.



8. Different rules apply out in the field than in the lab

No real-life test is complete without real-life difficulties: our field test has shown that sometimes even the smallest details can make the difference between success and failure, that despite the greatest care even nature can cause unforeseeable difficulties - and that any system is only as good as its setup and installation on site. As is well known, there is no such thing as one hundred percent certainty, neither for projects nor for the people who implement them.

9. The perpetrators learn and challenge us all

In this report, we have also not mentioned some details such as the disruptive measures used and certain types of movement in order to avoid perpetrator training. However, all participating manufacturers were informed in detail about possible weak points of their systems so that they can optimize their systems and make appropriate system settings when implementing projects in perimeter protection. Already the willingness to participate in this test and the high effort of the participating manufacturers shows the users that these manufacturers cover this market segment with a high degree of professionalism - and we firmly expect that they will further optimize their systems for their customers with the help of the findings of this test. Last



but not least, the current events in Israel show the means perpetrators use to try to overcome perimeter security solutions. It makes more sense to prepare for a semi-professional or professional perpetrator than to expect an amateur.

10. After the test is before the test

Constant learning and improving is of course also true for us. Wiley and GIT will already start further tests in the middle of next year. There will be the possibility of new tests for new manufacturers and those already tested both at GIT System Test Video Analytics and at GIT System Test Perimeter Protection to see what improvements have been made.

For further questions or suggestions please contact us with an e-mail to GIT-GS@Wiley.com

This test is a snapshot. The manufacturers have without exception expressed their gratitude for the "treasure trove of scenarios" and will certainly lift it. In concrete terms, this means: depending on the respective manufacturer, we can expect improved systems in the near future, e.g. further developed hardware, new firmware, upgrades and updates.

We will consider further developments and systems from other manufacturers in new test series and test them next year under more stringent conditions in terms of sabotage and stealth measures. We will present the results and findings at Security Essen 2024 in a lecture and panel discussion.

Stay tuned for more news on testing. To stay up to date, we recommend that you subscribe to our free newsletter. To do so, simply enter your desired e-mail at www.GIT-SECURITY.com/newsletter.



GIT System Test Video Analytics

	Hanwha Vision	Hikvision	Johnson Control (Tyco)	Senstar	
Overall percentage of passed scenarios	79 %	96%	Without Rating The test was conducted exclusively for	The test was con-	
FAR/NAR Evaluation	Recommended	Conditionally recommended			Without Rating
Operation	Highly recommended	Recommended			out exclusively for the
Daytime performance	87%	97%	the manufacturer's	manufacturer's deve-	
Nighttime performance	63%	94%	ment. According to the manufacturer, the consistently successful results provide valuable insights for further de-		lopment department
Close range (Alpha)	94%	94%		in order to test new developments in the	
Medium range (Bravo)	70%	100%		·	field of video analysis.
Distant range (Charlie)	75%	94%		According to the manufacturer, the test results are promising and quite positive.	
Apparel 1 (Streetwear)	83%	100%			
Apparel 2 (Camouflage & Ghillie)	78%	94%			
Sabotage	67%	92%		·	
Movement type 1 (walking upright)	82%	99%			
Movement type 2 (kneeing, lying or rolling)	77%	93%			

	Hanwha Vision	Hikvision	Johnson Control (Tyco)	Senstar
Thermal Camera Camera Manufacturer	Hanwha Vision	Hikvision	Day/Night PTZ- Camera Illustra (JCI)	Axis
Camera Type/Name of Model	TNO-4050T 35 mm	DS-2TD4167-25/W	Pro Gen4 PTZ	Q1951-E 13 mm 30FPS
Resolution	640 x 480	640 x 512 (Thermal modul)	1920 x 1080	768 x 576
Lens Data (Focal Length [mm]/Aperture [f]	hfov: 35mm / 17,2°, F1.0	25mm / 25 °C, f=1.0	4,5–135 mm F/1,8(W) – F/6,5(T)	hfov: 13 mm / 31°, F1.0
List Price of the Camera (net Euro)	€ 8,380	S.U.	€ 4,676	€ 2,999
Camera Day/Night (RGB) Camera Manufacturer	Hanwha Vision	Hikvision	Illustra (JCI)	Axis
Camera Type/Name of Model	XNP-6400RW	DS-2TD4167-25/W	2 x Pre Gen4 2MP Mini dome	P1377-LE
Resolution [MP]	2 MP	2688 x 1520, 4 MP	1920 x 1080	5 MP
Lense Manufacturer	Hanwha Vision	Hikvision	Illustra (JCI)	Axis
Lens Data (Focal Length [mm]/Aperture [f]	4.25-170mm / F1.6 DC-auto-iris w. hall sensorr	6-240 mm/1.8°-56.6°/ F1.3-F4.6	2,7-13,5 mm, F/1,4-F/2,8	Vario focus 2,8 to 8 mm, F1.2
List Price of the Camera (net Euro)	€ 4,010	Total price: € 7,129	€ 996 / € 1,078 €	€ 1,079
Manufacturer of Video Analytics	Hanwha Vision IVA	Hikvision	Illustra	Senstar
Version	Hanwha Vision	VCA (Video Content Analysis)	Illustra Al	Senstar Deep Neural Networks Videoanalyse (Day/Night Camera)
Version Number	Thermal FW 1.40	Version 2.0 (Firmware_ V5.5.59_230718)		Symphony 8.7
Which detection type is used (object-oriented or pixel-oriented detection)	Thermal pixel-oriented, XNP-XNV AI based IVA with object detection	object and pixel-oriented	object-oriented	object and pixel-oriented
Analysis made (server/edge)	Edge-based analysis	Edge	Edge	Server
Version				Senstar analysis for outdoor areas (thermal camera)
Version Number				Symphony 8.7
Which detection type is used (object- oriented or pixel-oriented detection)				object and pixel-oriented
Analysis made (server/edge)				Server
Video management	Wisenet Wave			Senstar Symphony Common Operating Plattform
Recording Server/Client	WRN-810S (8 Channel WAVE PoE+ NVR)			
List price Server/Client	€ 1,782			

GIT System Test Perimeter Protection

	Navtech Radar	Optex	Sorhea
Overall percentage of passed scenarios	Without Rating The test was conducted to draw an assessment to be usedby the manufacturer. According to the manufacturer, theresults provided insightful feedback that will be incorporatedinto future product development.	97%	88%
FAR/NAR Evaluation		Highly recommended	Highly recommended
Operation		Excellent	Highly recommended
Daytime performance		96%	84%
Nighttime performance		100%	91%
Close range (Alpha)		97%	82%
Medium range (Bravo)		100%	93%
Distant range (Charlie)		94%	84%
Apparel 1 (Streetwear)		100%	86%
Apparel 2 (Camouflage & Ghillie)		96%	86%
Sabotage		92%	100%
Movement type 1 (walking upright)		97%	100%
Movement type 2 (kneeing, lying or rolling)		97%	57%

	Navtech Radar	Optex	Sorhea
Sensor type	Radar	LiDAR	Active Infrared Barrier
Manufacturer	Navtech Radar	Optex	Sorhea
Type/ Model	HDR124	RLS-50100V	Maxiris / 3100
Number of Sensors	1	1	n/a
Laser Class (if applicable)	n/a	1	n/a
Reach (m)	Up to 300m. Part of the HDR wide area surveillance radar series with up to 3km radius	50 x 100 m (regular range, rectangle) or 80 m (extended range, radius of 190°)	100 m
List price system (net in Euro)	Depending on the total amount of sensors in a project	€ 7,420	€ 6,400
Software			
Manufacturer	Navtech Radar	Optex	Sorhea
Version/name	AdvanceGuard	Redscan Pro Firmware	
Version number	v4.12	2.1.0	



Long-Range Surveillance Camera

The new Fujinon SX1600 is a long-range camera system for surveillance as far as 3 km away. Featuring a 40x-zoom Fujinon lens that covers a focal length range from the wide-angle 40mm to 1600mm telephoto, it is equipped with a newly-developed image stabilization system as well as fast and accurate autofocus to capture a distant subject clearly and instantaneously. This allows a registration plate on a car at about 1.6 km away or even a person standing approx. 3.5 km away to be captured. The SX1600 can be used for a wide range of applications, including the surveillance of international borders, forests, and large-scale public facilities such as airports, ports, highways as well as remote inspections of infrastructure facilities such as wind turbines and transmission cables. The SX1600 complements Fujifilm's exiting portfolio of long-range cameras, the SX800 and SX801. www.fujifilm.com

Retail Surveillance Expansion

Idis has announced that Yves Rocher has chosen to roll out an end-to-end video solution across hundreds of its stores comprising a single 5MP fisheye camera, 4-channel NVR and the Idis AI Box for Retail. The solution is managed locally with the cost-free Idis Center client software, while head office teams use the company's Solution Suite VMS. This has up to 98 % accurate analytics from the AI Box for Retail, including people counting data collected and shared with Yves Rocher's EPR software. The solution ensures store profitability with advanced remote monitoring and business intelligence analytics to give its central management team greater understanding and control over branch operations. In addition, the leading beauty firm now also has a robust video solution to reduce shrinkage, improve customer service, drive sales, and improve staff performance.

Camera to Cloud Software

Milestone Systems has an upcoming release of a new camera-to-cloud deployment option for its video surveillance as a service (VSaaS) software. Known as Milestone Kite Camera to Cloud, it works with a series of Axis cameras pre-installed with Al-based object analyt-



ics. All computing, recording and video storage takes place on the cameras, which connect directly to the Milestone Kite cloud. This can reduce bandwidth load and associated costs, as well as installation and maintenance costs. The solution is particularly suitable for businesses with multiple locations with a small number of cameras at each site. It is also beneficial for those with limited IT knowledge, bandwidth limitations or situations where installing on-site gateway hardware is not feasible.

Low Voltage and PoE+

The NetWay3024P utilizes a PoE+ input to provide simultaneous 24VDC and PoE/PoE+ over a single structured cable to a wide range of devices including PoE cameras, external microphones, sensors, control boards, switching equipment, and more. It offers more versatility for transmitting data and power to devices, is TAA and NDAA compliant, and backed by a lifetime warranty.

Smart Door Controller

The new D410 Smart Door Controller makes every door smart and enables digital access for existing analog door intercom and locking systems with an electric door opener, especially for the main entrance door. Commonly used doors in residential and office buildings can be opened by authorized individuals such as residents, family members and friends, employees, handymen, and other service providers via the intelligent door controller on the app or using a Bluetooth key fob remote control. Without having to change the building fabric, the device can be installed out of sight behind the panel of the existing intercom system. It has a mobile radio module, meaning only a low-voltage connection (15 V DC) is required at the site of installation. The power adapter is included in the scope of delivery. The device can also be operated via LAN/PoE as an alternative option. The door controller now only needs to be connected to the existing www.doorbird.com electric door opener.

Updated Web Embedded Access Control Unit

Integrated access control and security manufacturer TDSi has updated its Gardis web embedded access control system. This 3.9 firmeware version now enables the inclusion of twelve doors (up from eight previously) without the need for a license dongle, while only one dongle is now required from twelve doors up to the control unit's maximum of forty-four doors. The unit is a user-friendly solution designed to provide seamless and secure access control management. The innovative unit combines the power of an embedded server (removing the requirement for a dedicated PC) with robust access control features, allowing users to conveniently control and monitor access. With its web-embedded interface, administrators can easily configure and manage user permissions, schedules, and event logs, streamlining the access control process. Its scalability and flexibility make it perfect for smaller single site systems where up to 5,000 credentials are required. www.tdsi.co.uk

GIT SECURITY

INNER COVER



::i-PRO



GIT SECURITY: We can look back at more than two years of i-PRO EMEA now. What would you say makes your company different to other players in the EMEA market?

an open platform environment.

Gerard Figols: In EMEA it has been 2 years, globally 4, but all together, we have more than 60 years of experience in the security industry. So, despite we see ourselves as a start-up, we still put our stable and reliable company legacy paired with longstanding know-how, and we combine it with innovation and the mindset to bring the latest technology to our customers quickly, so they can benefit from it. It's what we call the best of both worlds. As the only global Japanese manufacturer, we are proud to state we have achieved three times the growth of the market in the EMEA region.

Why should customers consider your company as their first choice to partner with?

Gerard Figols: We live and work by the philosophy that security should run in the background and notify you proactively when there are things to pay attention to. After our split from Panasonic, we focused on what we do best: building strong and powerful hardware based on more than 60 years of experience forming the core of our business. To prevent unintended external access and open backdoors, i-PRO offers the most cyber secure line-up in the market with the biggest proportion matching FIPS 140-2 level 3, the highest level of. Because we understand the importance of data integrity, we were the first manufacturers worldwide to implement this level, delivering on our promise to be your trusted partner.

On top of this robust hardware, we add AI running directly on the camera: more than 125 models of our line-up come with powerful onboard AI thanks to the Ambarella chipsets we are using. When it comes to managing AI applications, we are pursuing an open approach to give maximum flexibility to the way our customers want to use and customise our hardware to best fit their needs.

Everyone is talking about AI, sometimes in good, sometimes in more negative ways. What's your take on it?

Gerard Figols: Basically, it's like with every new technology: There are opportunities, and there are risks. Personally, I am sure that edge-AI devices will penetrate the market, way quicker than the technology shift to IP because of the immense benefits it brings – and i-PRO wants to lead this evolution. All the data we generate needs to be treated with responsibility, in a transparent, ethic and compliant way. On top of this, all of our products are also NDAA compliant, so our customers get full peace of mind when using i-PRO's AI in their installations.

Given this framework we believe that AI will be a true game changer. We understand ourselves as the pioneers in turning security hardware into devices for providing business insights ultimately. Through AI, we can gather so much more meta data nowadays that goes way beyond the pure video footage, and AI can make it even more precise, and by improving the algorithms increasing the overall system performance. AI data-driven insights will revolutionise the industry.

Let's look at one specific example now, your latest innovation, the new X-series. What makes this product so prestigious?

Gerard Figols: The new X-series is our new flagship model, and will allow customers to exponentially grow their usage of AI

because of its forward and backward compatibility of this innovative technology. Let me explain more in detail: understanding that there are many existing legacy installations out there that cannot instantly be renovated, but still want to tap into the latest AI technology and its benefits, we came up with a way to enhance traditional legacy cameras with AI capabilities. With our integrated AI Smart Box functionality, we are making traditional non-AI cameras smart, and more efficient. This way, you can keep your current installations and still see and test the AI technology and its impact to your surveillance operations for vourself.

On the other hand, the new series is also enabling on-site learning, let's say to make the camera even smarter. You can teach the camera to detect any kind of object, which means the possibilities of the hardware when you purchase it off the shelf can be tailored according to your needs and based on the data you feed it. This means you can train the device for any kind of application you need, and even share this

knowledge that you generate on one of the new X-series cameras to other models of the same kind, so you are continuously enhancing your whole security installation.

So would you say that you are already thinking ahead on behalf of your customers?

Gerard Figols: AI is bringing limitless possibilities for making security smarter and operations more efficient, and the future will bring so much more AI-based innovation potential that we cannot foresee yet, but we want to be the market player that provides the right platform for future growth. The power of data analysis will take video beyond security, but for this you also need a mode to integrate all this AI-data generated into your security and business operations to access and unlock its full potential.

As part of our overall AI ecosystem, we offer an easy, intuitive and quick way to segment and handle all the meta data generated, called i-PRO Active Guard. The

plug-in enables situational awareness and proactive notifications based on attributes; so you can receive a real-time alarm when a predefined match is identified. Within seconds, you can also run backwards data mining to identify critical situations after they happened. Seamlessly integrating into industry-leading VMS providers like Milestone and Genetec, users can access the full power of AI in their existing or new installations.

And to make sure this ecosystem is growing with our partners and their applications, Active Guard is also able to display the new items that were added through onsite learning through the new X-series. This way, you can purchase hardware today that is capable of detecting and categorising situations in the future that you are not even aware of now.

i-PRO EMEA
www.i-PRO.com



- 1. As a cloud-based surveillance company, our primary recommendation for storing security camera footage is utilising cloud storage. Cloud storage offers numerous advantages, including cybersecurity assurance, remote accessibility, scalability, and automatic backups. It ensures that your data is secure and easily accessible from anywhere, enhancing both security and convenience for our users. While local storage onsite can serve as a redundancy option, our focus is on leveraging the power of the cloud for optimal video data management.
- **2.** Cloud storage solutions have gained substantial traction in the security market. The adoption of cloud storage is driven by its numerous advantages, includ-

- ing adaptability, cost-effectiveness, and the ability to meet evolving security demands. With advancements in data security, cloud storage is increasingly being recognized as a forward-looking solution.
- 3. When planning a security system, we advise focusing on comprehensive data management. Ensure your chosen storage solution can accommodate the data volume generated by your cameras and provides data redundancy. Additionally, consider integrating cloud-based storage for its remote access, automatic backup, and ability to scale as your system evolves. Collaboration with experienced system integrators can help you design a tailored solution that aligns with your unique security requirements.



Rishi Lodhia Vice President and Managing Director, EMEA Eagle Eye Networks

www.een.com



Andy Palmer
Enterprise Solutions
and Cloud Group Lead UK
and Ireland at Seagate

www.seagate.com

- 1. We always advise our customers to have a back-up strategy in place, comprising the "3-2-1" rule. This calls for 3 copies of data, 2 different media types and 1 copy being off-site. This means that data is safe and available under all circumstances. As data grows, and video finds uses outside of security, it becomes vital to keep it safe. Using a hybrid solution on-prem storage complimented by a copy in the cloud, is the easiest way to achieve this level of data integrity. Although this may sound complicated, there are many software solutions that can enable this the user simply sets the policy up and lets the equipment decide what and when to move data to the cloud.
- 2. The video imaging and security sector is undergoing a period of intense transformation, driven by rapidly increasing demand from a broadening range of end-users, including banking and finance, retail, media and entertainment, and local governments. Outdated, on-premises infrastructure risks holding back progress. With more data being produced than ever, the way we build video imaging and analytics systems needs to change. A mix of on-site and cloud storage infrastructure is going to be the key to
- making the most of all this data and unlocking new growth opportunities. However, with rapid growth comes increased complexity and cost. Seagate has developed a very simple storage as a service plan Lyve Cloud that in addition to a low monthly fee allows for limitless and cost-free ingress and egress. And with our sophisticated data security you know your video is safe.
- 3. Assess your business needs and plan the data storage and management accordingly: for example, if you have a data set that you need quick easy access to, then that data can stay on on-prem storage where it's readily available. However, the business may also have much larger archival data sets that aren't needed to be readily accessed so frequently, however they do need to remain searchable and indexable for use in business analytics. In this use case, private or public cloud environments offer clear advantages over on-prem in terms of costs and feature sets. As the industry continues to expand with new end-users and innovative applications of video analytics technology, the vendors and installers that recognise this potential today will be the ones to reap the benefits in the coming years.

1. Both are viable options. However, both also have their pros and cons, and much depends on the specific needs of the organisation.

Local storage gives you direct control over your data. Nonetheless, in an ever-evolving landscape of threats, most organisations encounter challenges when it comes to effectively monitoring and safeguarding their network.

Conversely, cloud storage offers several advantages, including scalability, automated backups, and reduced maintenance. Additionally, cloud environments have the means to detect any potential threats (physical and cyber) in real time through their operations centres and monitoring systems. And of course, in addition to onsite and cloud there is the hybrid approach. This strategy offers organisations the best of both worlds - greater agility, such as having flexibility to increase or decrease cloud-based storage and processing as, and when needed. It's a way to leverage the benefits of both technologies and stay resilient to changing requirements across your organisation.

- 2. For numerous years, the industry has talked about the adoption of cloud storage though significant progress has only been made recently. This is primarily due to improved connectivity and a better understanding of the benefits of cloud storage. Other key factors driving this adoption include:
- Immediate access to footage anytime from anywhere (access permitted);

- Elimination of upfront costs and delivery delays when implementing physical security solutions through cloud storage;
- Scalability of cloud storage to meet future growth and requirements, bolstered by enhanced security and compliance from redundancy, which mitigates the risk of failure.

However, there is still work to be done in the industry, starting with educating stakeholders and dispelling myths and fears associated with cloud adoption.

3. Increased adoption of cloud storage is not only needed but highly beneficial for the physical security industry. It enables a wider range of organisations to implement effective security measures, adapt to changing requirements, and operate more efficiently whilst also being more cost effective by reducing hardware and maintenance fees.

Staying informed about the latest trends and innovations in cloud storage within the industry is advisable for organisations looking to enhance their customers security capabilities.

Furthermore, when planning and mapping out a new system, integrators should consider offering alternative design options, including cloud or hybrid cloud solutions. More and more end users are seeking innovation from their existing systems, and one way is through cloud adoption providing them with the value-add which I have highlighted in this Q&A.



Viet Tang

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Anders Bo Rasmussen
Director of Product
Management at Milestone
Systems

www.milestonesys.com

- 1. It depends on the retention time required, i.e. how long time the camera footage needs to be kept before it can be deleted. If the onsite local storage has sufficient disk space, then the recommendation would be to keep it local. If the retention time is high and the onsite local storage isn't sufficient then an external storage solution can be used, be it a SAN (Storage Area Network) solution or a cloud storage solution. Milestone XProtect supports encryption of the video footage being recorded, so no matter where the video is stored, onsite or in the cloud, encryption ensures the level of security is kept as well.
- 2. The adoption of cloud storage solutions in the security market is different from country to country and region to region. It has a dependency on the availability of reliable and affordable internet connections as uploading video is a bandwidth intensive task.
- 3. It is recommended to combine flexible user access permissions, secure media database handling supporting encryption and digital signing of video recordings. By doing so the Milestone XProtect video management software (VMS) storage architecture provides an effective solution for securing sensitive and mission critical recordings. XProtect VMS offers a unique, flexible, and secure storage architecture that utilizes standard IT storage solutions to deliver reliable and high-performance recording of XProtect's media streams and data, allowing the option to design hybrid storage solutions that utilize the best traits of onsite and cloud storage technologies.

- 1. This is down to the requirement of the customer. Both, local and cloud storage have advantages and disadvantages depending on the use case. If customers are looking for immediate control, latency, and cost, the best fit is local storage. This, however, comes with the risk of physical damage (e.g., theft or fire). That's why some customers, especially in exposed environments, are more interested in cloud solutions that also offer scalability, remote accessibility, and redundancy. In most cases, we see an interest in hybrid solutions. This way, customers can compensate disadvantages and store critical footage locally for immediate access, while using cloud storage for redundancy, and long-term archival. To summarize: Customers need to know their requirements to create the best possible solution.
- 2. In recent years, cloud has become increasingly popular. However, adoption can vary depending on different factors. Small and medium-sized enterprises (SMEs) use cloud storage for cost efficiency, ease of use and security and larger companies are also becoming more interested in cloud-based solutions for data backup and disaster recovery. Not only is company size relevant, but industry also plays a

- role. While sectors such as education and entertainment are very receptive to the cloud, there are other sectors like healthcare and finance that have strict regulatory requirements. Storage manufacturer like Western Digital need to constantly work with cloud providers to build in appropriate security features, access controls and threat detection to further drive adoption in these industries.
- 3. Before installers, system integrators (SI) and end users start planning their security systems with respect to video data storage, they need to define the purpose of their solution. Is it theft prevention? Employee security? Traffic management? Whatever the factors, decision-makers need to ensure the effectiveness, reliability, and compliance of their system. Not to mention technological advances that bring new challenges depending on the use case. To be best prepared, it is important to take a holistic approach and weigh up the pros and cons, while also considering the right hardware. Products like the WD Purple Pro drives are well prepared to handle a wide variety of streams in reliable operations and to meet the demands of AI.



Kai Frieben Senior Sales Manager, Central Region at Western Digital

www.westerndigital.com

Fingerprint Recognition

Suprema has launched the BioStation 2a, a deep learning-based fingerprint recognition solution providing powerful access control features. The cutting-edge Al algorithm is embedded, and this innovation was achieved through the company's expertise in creating a lightweight Al engine optimized for an edge device. The IP65-rated product is an edge device with an Al processor and NPU(Neural Processing Unit), optimized for deep learning, delivering highly accurate and fast fingerprint recognition. The ability to extract templates from low-quality fingerprints has significantly improved by 30 % in accuracy. Additionally, BioStation 2a has an improved fingerprint recognition speed through a 1.5 GHz quad CPU(processor), supporting up to 50,000 users in 1:1 matching and 100,000 users in 1:N matching. There are a range of credential options including fingerprint, RFID, and mobile access (BLE/NFC).

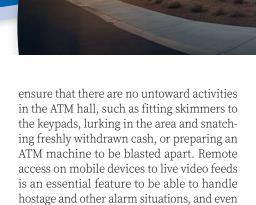


SPECIAL FOCUS

Access Control For Banks

A Bucket List of Things To Do

SPECIAL FOCUS



if cloud access has been interrupted.

Banks, of course, want people to come into their branches, just not all the time and not everywhere. Add to this the necessity for compliance with (inter) national security regulations for the banking industry. They are faced with restricting access to certain areas of the property to authorized people at valid times of day or night. Easy, you might think. Let us take a closer look at the headaches that this subject can cause for security managers, and some aspirins to relieve them.

In recent years in the face of severe online competition, 'brick-and-mortar' banks have had to reimagine what a physical branch should be and what the 'branch of the future' should look like. Some have redesigned interiors in the style of shops, with rows of consumer terminals displaying their banking app. The self-service cash in/out option must remain and is being enhanced in some locations with community spaces and advanced technology. These spaces are for people who have to use cash rather than using an online transfer of funds, including retailers and many small businesses, as well as people with limited digital literacy for example. As cash use continues to decline, the banking infrastructure is becoming unsustainable and many former ATM locations have been closed.

However, until the last ATM is switched off, the customer's 'open Sesame' credit or debit card is internationally the most common method of granting access to customers, or valid guests, to an indoor area containing ATMs and/or other customer terminals. Installing good video surveillance can help to

Real-Time Action

Geutebruck recently commissioned a comprehensive upgrade of a bank's video security by providing remote monitoring and control of seventy surveillance systems installed at outlying branches. Maintenance tasks and upgrades are performed remotely, while any alarms are fed back to the central security point. The entire system is set up with redundancy to ensure continued operation at all times. Kötter Services can provide a comprehensive security solution covering burglar and fire alarm systems combined with video surveillance and access control systems that report back to either your own or their own security center.

Public Traffic

Anyone intent on robbing a bank during opening hours does not want to be greeted on the way in. Although this may be considered labor-intensive these days, 'greeters' actually fulfill a number of useful functions apart from just being a first, passive security tool. The first impression a (wanted!) visitor has is one of being cared for – invaluable for customer retention. Secondly, a smiling source of information

is much more appealing than a signboard. Thirdly – and here comes the punchline – a potential robber will immediately be looked straight in the eyes when they come through the door, and this can be deeply unsettling to them, perhaps even causing them to turn around on the spot and leave.

BANK

Security guards in a smart uniform are an even more potent visual deterrent to crooks, but also a reassuring presence to the general public who will automatically feel safer in the knowledge that someone is watching their back. In those countries where guards are allowed to be armed, any robbers who have previously inspected the situation there will strike that branch off the hit list. You might like to speak to Hel-Wacht to discuss your requirements for armed security personnel in Europe, or Neptune Security Group in the Middle East who have significant experience of threats in that part of the world.

Staffside Areas

Physical protection in a bank branch is of course not just to protect cash, but also the staff, the customers, safety deposit boxes, technical resources such as cash recyclers or cash deposit machines, sensitive data, and access to servers and other IT-components. Special consideration must be given to the access and security needs of cash-in-transit collection and delivery firms. Choosing a suitable system out of literally dozens of suppliers of electronic access control could be daunting, unless you make some decisions about the type of system you are looking for right at the start.

In a banking environment, we are looking for a versatile, flexible and easilymanaged system that indelibly records which access token was used at what time to open which door. We will be ensuring that the tokens cannot be duplicated, and that the readers cannot be tricked. Twostep verification with biometric readers is of course almost obligatory for higher security areas. There will most likely also be a 'duress' code to silently alert to an emergency situation. Centralized management will be an essential feature, and there might well be some integration with video surveillance so that door activity triggers a video system to focus on that area. The need for all these and other high security features already thins out the candidate systems and suppliers considerably.

Honeywell Commercial Security understand the highly complex security requirements of the banking industry and can provide a holistic solution for branches, as well as for administrative headquarters or IT centers. Nedap Security is fully aware of the legislation to be complied with in many different countries, and has effectively a 'onestop-shop' to provide the complete branch access control package. Its open solutions integrate freely with other building systems such as visitor and parking management, or elevator control for example. Genetec will

help you define an open, unified and highly-developed solution that ensures compliance with applicable bank regulations. They have already issued a White Paper on the subject that is available for download¹.

Employee Training

All the best technology in the world will not be secure if it is incorrectly used. Easy to overlook after concentrating so hard on the technology aspect is the human element. Human error, infiltration and blackmail situations can all be avoided, or at least the effects minimized, by ensuring that staff are aware of as well as competent and confident in handling such events. Specialist and trustworthy training is best provided by external specialists such as knowbe4 who have a comprehensive program of tailored training sessions available. To make situations much more realistic than simply one-way online training, WarpVR uses virtual reality technology to immerse the trainee in an environment close to what they could encounter, giving that 'real-life' feeling. DMAC security in North America not only provide training services but also 'feet on the ground' security staff among other services as part of an overall security strategy.

Lastly, do not overlook the type of security lapse that just makes you groan

if it turns out to be the cause of a robbery. Security at a branch may be tight during the day, with visual checks of those coming into the branch by receptionists and 'greeters', and high-definition video surveillance keeping a watchful eye on things. But do not allow all the daytime security to dissolve at night because the cleaning crew is inside and they have propped the door open with a bucket.

[1] Genetec White Paper for the banking industry: https://www.genetec.com/industries/banking

Suppliers

DMAC Security I https://dmacsecurity.net

Genetec I https://www.genetec.com

Geutebrück I https://www.geutebrueck.com

Hel-Wacht Bewachungsdienst I

https://www.helwacht.at/en/

Honeywell Commercial Security |

https://buildings.honeywell.com

KnowBe4 I https://www.knowbe4.com

Kötter Services I https://www.koetter.de

Nedap Security I https://www.nedapsecurity.com

Neptune Security Group |

https://neptunep2pgroup.com

WarpVR I https://www.warpvr.com





For more information about our initiatives around sustainability in buildings, please scan the QR code.





a basic requirement for many hotel visitors that functions can be easily accessed via their smartphone or that video security is easily implemented in the existing systems. In this vertical, the security system highly affects customer experience, therefore it needs special functions, in the areas of entertainment or food ordering. Let's take a look at our collected installation examples.

Access Control, Access Management, Mobile Access

Intelligent Access Solution: 19th-Century Villa with 21st-Century Structure

The Hotel Flint in Austria combines the best of modern and traditional hospitality. The 19th century villa with an expanded 21st century structure was in need of renovation. Therefore, the developers were looking for a smart access solution that would meet both aesthetic requirements and help hotel staff manage the premises and provide better service to guests. In addition, flexible system management was needed to secure doors and services remotely.

The Flint chose Assa Abloy's Tesa Wireless online access management system with 80 i-minimal electromechanical door locks, wall readers and fire-certified i-max locks.

The solution is equally suitable for a historical building as for a modern structure. The electronic door devices allow Flint to offer its guests a modern hotel experience, including self-service check-in and access to their rooms via smartphone. The system management software integrates with the hotel's self-service kiosks: guests check in from home, enter the hotel with a PIN and receive their key card at the kiosk.

Convention and Conference Hotel "The Bloc"

The Bloc Hotel at Gatwick Airport in London is based on a new way of thinking: clever new design and construction techniques have been implemented in small, chic rooms to offer modern accommodation for people who value quality but don't need the fuss of a luxury bunker.

A main concern was to find a room lock that worked with the technologies already implemented. Designed specifically for the needs of hotels, Salto's AElement

contactless, elegant electronic lock offers a range of hospitality-specific applications, including the ability to control the security of the entire hotel from a single location. This includes granting access rights to individual guest rooms and collecting audit trail data from each door in real time, without leaving the front desk. Additional benefits for the hotel include the ability to change rooms and extend stays immediately, as well as the ability to cancel lost cards, burglar alarm, alarm, remote opening, real-time audit trail, activation of meeting room walk-through mode and automatic low battery notification.

Combining Access Control for Rooms with Common Areas Access Control

Another access control and guest services provider is Omnitec Systems. According to them, they are installed in more than 10,000 hotels around the world. They specialize in combining access control for rooms with access control for common areas, main entrances, garages, and restricted areas with PMS integration and manage everything from one point. As in every company, saving energy is an ever-present



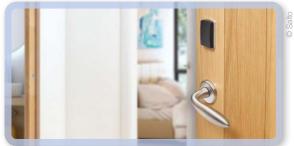
Operators can zoom in on any number of freely selectable image areas. In this application, the three Panomera systems replace between 20 and 24 single-sensor cameras.



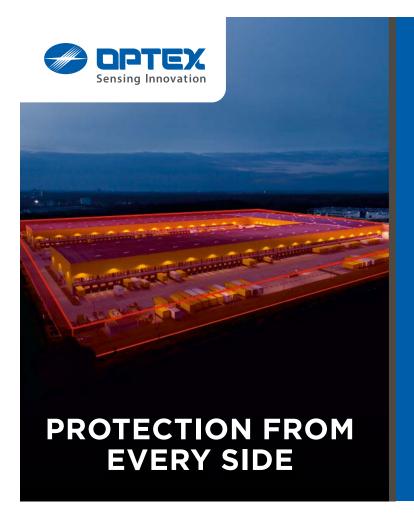
With just three Panomera cameras, Sun City Hotels & Casino Resort covers 16,000 square metres.



Various Dormakaba access solutions within the hotel ensure a secure, comfortable flow of people by providing flexible access authorizations



Salto's AElement contactless, elegant electronic lock offers a range of hospitality-specific applications



www.GIT-SECURITY.com

Long range detection with REDSCAN PRO

The award-winning OPTEX REDSCAN LiDAR series just went one better, with a new detector featuring its longest range yet. The REDSCAN PRO can accurately detect intruders and moving objects up to 50 x 100m away – making it particularly well suited for those responsible for protecting the highest security sites. And by creating rectangular, high resolution detection patterns, there are no 'gaps', so everything from facades to fences, ceilings to roofs can be covered. For the installer, the sensor's intelligent multiple zones logic means

each detection zone can be independently configured, while its camera module brings visual assistance for configuration and post-alarm analysis. The alarms and video stream can all be configured via ONVIF.

www.optex-europe.com



ONVIF is a trademark of Onvif, Inc.

INTRUSION DETECTION | VISUAL VERIFICATION TAILGATING DETECTION | VEHICLE DETECTION PEOPLE COUNTING

goal in hotels. Through a well-thought-out and planned distribution of sensors and energy savers in hotel rooms, it is possible to reduce electricity consumption in hotels by up to 60%.

Emirates Palace Luxury Hotel with Access and Room Control Systems

Messerschmitt Systems integrated an access control solution for a luxury hotel in the Middle East. Located directly between the Persian Gulf and Abu Dhabi's bustling city center, the Emirates Palace is one of the largest and most luxurious hotels in the world. Originally built as a meeting place for the sheikh at the time, the fairytale palace with its golden domes and paradisiacal sandy beach is now a spectacular 5-star hotel. With a style inspired by the magnificent buildings of the ancient Near East, this luxury hotel invites travelers to a unique vacation experience in another world. For the access control solution, the customer chose transponder chip card readers from the "Magic Glass" series, which fit seamlessly into the characteristic wall design next to the doors.

Each of the 343 rooms and suites will also be equipped with individual room management solutions from the "Luxury Line". Whether as a wall panel or a practical table solution next to the bed: The Messerschmitt panels with mechanical buttons enable intuitive control of curtains, lighting and room temperature and skilfully round off the luxurious interior with elegant surfaces made of high-quality stainless steel with a matt gold finish. In addition, the new integrated housekeeping module simplifies room and guest management for employees.

Sheraton Milano: Integrated Access Solutions

The Sheraton Milano San Siro is a 4 star hotel belonging to the international Marriott chain. With modern architecture, over 300 rooms, a spa, fitness center and a large outdoor area with a swimming pool, bar, and restaurant, it has everything guests need for a superb stay. Various Dormakaba access solutions within the hotel ensure a secure, comfortable flow of people by providing access authorizations tailored to guests, employees, and staff. The result is a fully electronic hotel offering maximum security and convenience.

Arp Hansen Hotel Group With Mobile Key

Operated by the Arp-Hansen Hotel Group, Wakeup Hotels in Copenhagen with a total of four hotels with 1,900 rooms and the luxury hostel Steel House Copenhagen with 253 rooms, use Zaplox mobile guest app and kiosk solution to streamline the check-in/

check-out process and to provide better service during the entire stay. With Zaplox's app, guests staying at Wakeup Hotels and Steel House Copenhagen can book their room, check in, get a mobile key, check out, and pay their bill – directly on their phone. In addition to the mobile guest app, guests can also use Zaplox's tablet-based self-service kiosks that are placed in the hotel lobby for easy check-in and retrieval of key cards. Both the Zaplox kiosk and mobile guest app have been integrated with the hotel's property management system Opera/Suite8 from Oracle and with locks from Assa Abloy.

Video Security in Hotels

The Thief:

Scaling Security With a Small Staff

During the pandemic, the Thief Hotel had to slim down resources, meaning one security staff had to manage all of the property's cameras. Here's how Avigilon Alta helped. With many hallways and entry points, Alta lets the head of security check any camera from anywhere, not just the server room. Instead of searching through hours of footage, the Thief's team can search tagged events identified by the system as suspicious. The team connected new Avigilon cameras to third-party cameras already in use, turning the old cameras into smart cameras. Instead of trying to stay ahead of security incidents by working overtime, the team can scale security with help from non-technical staff using automated alerts and customized access settings.

Video Security with AI Applications

Another Vendor is VTIS. They are specialized in modern video solutions. They use video technology in various sub-areas to achieve the best solution: High-resolution IP cameras, high-performance and versatile video management systems and video analytics, but also innovative AI applications ensure that premises are reliably secured around the clock.

Their services include:

- DSGVO-compliant video surveillance solution
- Secure a feel-good atmosphere with video surveillance solutions from
- Safeguard sensitive areas
- Planning and installation by experts
- Preventive security in reception areas
- Secured access
- Protection against vandalism
- Monitoring of parking lots and underground garages
- Anti-theft protection in lobby, luggage and storage areas
- Discreet integration into the hotel environment

All solutions from VTIS for hotels have been field-tested for years and successfully used by numerous companies in this area.

Sun City Hotels & Casino Resort: 16,000 m² with Three Cameras

Talking about video surveillance: The legendary Wave Pool in the "Valley of Waves" is the undisputed main attraction in Sun City's famous water park. Here, visitors find their place in the sun, with two-metre-high waves shooting into the air every 90 seconds. But where there is a lot of light, there is also plenty of shadow which come in the form of pickpocketing and occasionally swimming accidents. With a video technology solution from Regensburg-based manufacturer Dallmeier, the Sun City Resort has been able to significantly improve their "customer experience".

Due to the size of the resort, it's a daunting task to monitor the movements of all residents and day visitors in the "Valley of Waves" and therefore, as in any amusement park, it's unfortunately unavoidable to be accountable for the actions of "Valley" users. By using Dallmeier's patented Panomera multifocal sensor cameras and SeMSy video management software, the operators have succeeded in effectively managing their liability for the safety of all visitors to the Valley. In the event of an accident, the company also has access to easy-to-use video documentation. This makes it possible to accurately reconstruct the causes of accidents and take appropriate action.

Suppliers

Assa Abloy I https://www.assaabloy.com

Avigilon | https://www.avigilon.com/

Dallmeier I https://www.dallmeier.com

Dormakaba I https://www.dormakaba.com

Messerschmitt Systems I https://www.messerschmitt.com/

Omnitec Systems | https://www.omnitecsystems.

Salto I https://saltosystems.com

VTIS I https://www.vtis.de/en

Zaplox I https://zaplox.com/



The Duravision IP decoding monitors are available in 23 inch and 27 inch diagonal sizes

The Eizo IP decoding box provides up to 4K UHD (3840 x 2160) resolution for two monitors

VIDEO SECURITY

Keep It Simple

A Computer-Less Solution to Video Surveillance

After a successful product launch in Japan, Eizo has now launched their current IP decoding solutions in Europe. The computer-less IP decoders are designed for video security systems with much simplified hardware. They also offer integration into leading video management systems.

he Duravision DX0212-IP, FDF2712W-IP and FDF2312W-IP models are available now and consist of two monitors (23 and 27-inch) and a decoding box for connection to any screen. The screens are full HD resolution (1920 x 1080) IP decoding monitors that display video streams delivered over the network, whether directly from IP cameras or via a video management system. The decoding box uses the same platform as the monitors, but has the option to display up to 4K UHD (3840 x 2160) resolution on each of two screens connected to it.

The Eizo IP decoding solutions do not require a PC or additional software or hardware, which greatly simplifies installation and saves time and labor costs. This eliminates potential sources of error and removes security risks that exist with conventional PC installations. The number of devices involved in handling sensitive visual data can be greatly reduced with their help.

Integration Compatibility

Eizo works with leading companies in the video security industry to ensure the technical compatibility and functionality of its IP decoding solutions with various video management systems (VMS). By using the jointly-developed plug-ins or providing support for these VMS solutions, users can easily set up, manage, and control video playback with the Eizo solution and its settings from a central platform.

The manufacturer has partnered, amongst others, with Qognify to integrate the Duravision IP decoding solutions with their VMS solutions, which are designed for corporate and enterprise projects where the focus is on connectivity, business process integration and low total cost of ownership. The integration of the three products allows users to control and monitor Eizo's IP decoding products directly from a Qognify VMS, including intuitive drag-and-drop for camera stream layouts, automatic detection and registration of cameras that

are already part of the VMS solution, and customization of image playback layouts. This simplifies initial system setup and live operation by allowing users to access settings directly from a central solution without having to access the monitor's user interface separately. This is helpful where monitors are installed in remote locations, as staff need to be on site less frequently to make adjustments or perform maintenance.

Full Control

The IP decoding solutions also support custom integration with local security systems and devices and enable communication from and response to alarms over the network. When an event occurs and an alarm is sent from IP cameras, access control, VMS or other systems, Eizo's IP decoding solutions respond with a predefined action, such as automatic layout adjustment, message display, camera PTZ adjustment, masking and more. Implementing such intelligent display systems into the workflow ensures that operators receive the most relevant information at the right time to react quickly to situations.

License Model

Because the further development and equipment of the Eizo IP decoding solutions is by no means finished, the Company offers regular updates and extensions to implement newly-developed technologies and functions. They are available as a standard update or as part of an optional Enterprise license. This upgrade capability helps to keep the products up-to-date during their use in larger security and surveillance systems. An optional enterprise license also provides access to advanced features of the IP decoding solutions. Their installation or activation on the devices can be done at any time before or after the hardware installation. Additional features include playback of recorded video, remote viewing of live streams via the web UI, customization of menus and support for additional protocols Axis as SRT (Secure Reliable Transport), LDAP (Lightweight Directory Access Protocol), Axis SRTP (Axis Secure Real-Time Transport Protocol) and SNMP (Simple Network Management Protocol).

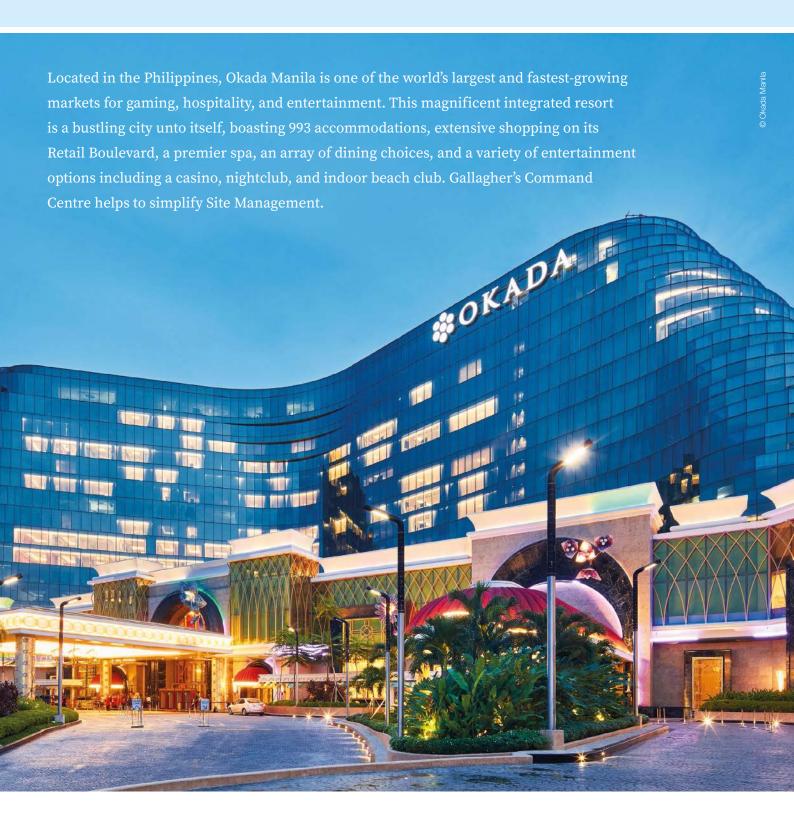
CONTACT

Eizo Europe GmbH www.eizo.eu/ip-decoding

SECURITY FOR HOTELS

Thousands of Staff

Simplifying Site Management at Okada Manila Resort Through Data to Achieve a High Level of Supervision and Monitoring



kada Manila has been accorded a Forbes 5-star rating for four consecutive years to date. To keep the resort abuzz, Okada Manila's thousands of staff spread out across this expansive and scenic oceanfront property.

"From a physical control standpoint, it can be incredibly challenging to secure a property as diverse as ours," says Kelly Billups, Executive Director of Security Technology Services for Okada Manila. "From a security systems perspective, we expect a very high level of capability to provide a strong layer of technical administration and proactiveness in regard to the overall security effectiveness for the property."

To achieve that high level of supervision and monitoring, Okada Manila requires a security partner capable of simplifying the site's complex management while offering controls capable of matching the resort's elite standards.

But Kelly takes it all in stride: "It's a huge operation, but the big benefit we have is that we've got Gallagher."

Managing a Site Through Centralized Data

The scale of Okada Manila's operation means managing their site's security has the potential to become unwieldy rather quickly. Even simply controlling staff entry can become a monumental task with a requirement that all employees and third parties use one dedicated entrance and exit to a very sizeable back of the house area that extends nearly the entirety of the property.

To ensure such compliances are met across the site, Okada Manila relies on data reporting from multiple technologies to provide a bird's eye view of the resort. Gallagher's Command Centre integration capabilities make it possible.

From one centralized platform, Okada Manila can generate singular, chronological reports populated from multiple systems, enabling their security division to combine data from their back of the house applications, guest lodging, electronic key management system, lifts on the property, and custom HR interface to produce a holistic account of activities within the resort.

"We rely on Command Centre for that technical administration and to generate high-level reports," says Kelly, "and those information sets are one of the key benefits of our Gallagher system." Data reporting also enables Okada Manila to optimize site management.

"Beyond the expected service of access control, we're looking for behavioral patterns in our reflective data and reports," explains Kelly. "We maintain a combined proactive approach utilizing live data with other systems, as well as conduct random audits every month to get a sense of how individual parts of our resort are operating. That information can tell us the usual amount of time or frequency members of our team utilize a space, perform an action, or generally move about the property, which in turn helps us identify where additional staffing or resources are needed, or if any unusual activity is happening."

A One Card Solution with Dramatic Results

But to achieve this level of oversight across their site, Okada Manila needs a single input tool for tracking those behaviors. To simplify the process and ensure compliance, Kelly introduced a one card solution.

Using a single card, employees can:

- Enter the property
- Operate lifts
- Access restricted areas, guest rooms, and amenities
- Interface with payroll time clocks, electronic key management, parking boom gates, and wardrobe services

We rely on Command Centre for that technical administration and to generate high-level reports. Those information sets are one of the key benefits of our Gallagher system.

Kelly Billups, Executive Director Security Technology Services of Okada Manila

"

Not only does this make it easy to collect data from multiple technologies, but this one card solution also removes the burden of managing several codes, key fobs, and cards for staff.

Locker Management Solution for 6,000 Lockers

But of all of these access card benefits, one in particular stands out: "If I were to lay claim to any one major win we've accomplished with Gallagher at Okada Manila, it's what we did with staff lockers," Kelly says. "We have around 6,000 lockers for staff and

third parties on our property, and previously, as experienced in other integrated resorts, we were only able to secure and manage lockers with mechanical locking solutions. This meant investigating any events involving staff lockers was significantly challenging and not always successful. But once we applied Command Centre's Locker Management Solution, we reduced undesirable events to nearly zero, and at the same time increased the efficiency of staff services."

Using their one access card, Okada Manila's staff secure their individual lockers, ensure they're closed properly, and prevent unauthorized access. "Such a dramatic reduction in adverse events has been an incredible benefit to the business and our employees, who don't have to worry about the safekeeping of their belongings anymore" explains Kelly. "And of course, it frees up security resources to focus on other things."

Partnerships Beyond Security

With all the complexity surrounding Okada Manila's operations, Kelly emphasizes that a supportive partnership is a key proponent among the resort's top security needs.

"Partnership is everything," says Kelly. "I know a lot of customers use less than 10% of the features when they deploy an access control system, but we always want more out of our system, so it's important that we work with a vendor who we know is going to listen to our ideas."

And Okada Manila believes they've found that kind of lasting partnership in Gallagher. "People ask me all the time, 'Why the preference for Gallagher?'; I say it's the ease of use, and most importantly, because they listen and cater to individual customer needs," Kelly reflects. "It's that ease of interface to a multitude of control and business systems, and you only get those results by really, truly listening and addressing your customer's needs. Trusting in that partnership and being able to combine all the technologies I need into one platform is critical to our success with security technologies."

CONTACT

Gallagher Security www.security.gallagher.com

LI-ION BATTERIES

The Latest On Lithium-Ion Batteries

Safety for Lithium-Ion Batteries: Unfortunately a 'Burning' Topic

VdS, Europe's most important institute for fire protection, has looked at the current state of research and practice concerning these potential hazards and, above all, some protective measures. Most of them easy to ensure and to implement.



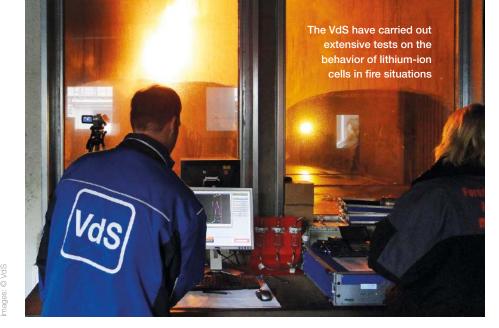
he main finding right away: each of us has heard about quite frequent and sometimes uncontrollable fires caused by this young lithium-ion technology. Instead of the good old (and usually harmless) zinc-carbon batteries, which we can still marvel at in low-energy devices like our remote control, the much stronger, very long-lasting lithium-ion batteries are gaining ground in all areas of our lives. They are also regarded by experts as "hypersensitive divas who blow up at every little issue" (Institute for Loss Research of German Insurers), significantly increasing the risk of fire.

Construction Quirk

At the heart of this battery system are electrochemical cells, typically made of an easily inflammable electrolyte. One core problem is the (so far) unstoppable agerelated destruction of the diodes' separator. Because the battery cells are individual, they age at different rates. While 'young' cells in the same battery can still have capacity and say 'give me more', older cells can already be overcharged, causing them to overheat. The same occurs in the other direction with a dangerous deep discharge (more on this below).

So unfortunately, lithium batteries can ignite due to a number of reasons that were not relevant for zinc-carbon batteries:

- Incorrect handling
- Mechanical damage
- Thermal stress (there are many examples of cars or busses standing in the sun and catching fire, or even exploding)
- Internal or external short circuits
- Overcharging
- Deep discharge –unfortunately this technology can also ignite from being empty, possibly leading to spontaneous combustion. But basically, the higher the charging level, the higher the danger.
- Quick charging
- Wrong charging equipment at least one easy thing to prevent





Video of a lithium-ion battery fire: www.youtube.com/ watch?v=vQ1cabt3jXc



Link to the VdS publication: https://shop.vds.de/download/ vds-3103en



Sprinkler Protection of Lithium Batteries: https://shop.vds.de/ publikation/vds-3856en

In addition, when a lithium-ion cell is burning, hydrogen can be emitted that can mix with the ambient air and form an explosive mixture. An extinguished battery can also reignite at any time, even days after a fire.

An example of the explosive power that can be released during a fire involving lithium-ion cells can be seen in a recording of a warehouse fire that started off quite small, but quickly became very serious once the cells caught fire. See the link at the end of this article. There was no warning

for the firemen – the warehouse manager had stored huge amounts of zinc-carbon batteries for years and understandably did not realize that the similar products with new technology had suddenly become a highly inflammable, even explosive and dangerous item.

Now some good news: quoting the German Insurers Association's statement after conducting practical tests together with VdS: "When handled properly, lithium batteries do not pose any unusual fire risk; the technology is suitable for everyday

use. This means that manufacturers, distributors and consumers have considerable responsibility when dealing with these powerful devices."

"When Handled Properly" – What Exactly Does That Mean?

The German insurers have bundled their findings and safety advice into a publication that can be downloaded free-of-charge – see the link below – recommending some general safety rules:





Good old-fashioned water sprinklers (here: thoroughly tested in the unique VdS laboratories in Germany) have been found to be very effective in preventing the spread of fire in lithium-ion battery storage areas

- Incoming goods inspection shall ensure that only undamaged cells and batteries are stored, for which UN 38.3 is available as evidence of checking. Special consideration applies to prototypes and returns.
- In any areas not protected by an automatic extinguishing system, a structural or spatial separation of a minimum of 2.5 meters from other combustible materials shall be maintained.
- Do not expose to high temperatures or heat sources (e.g. direct sunlight); 60 °C is specified by well-known manufacturers as an upper limit to protect against capacity loss and increased fire risk. At the other end of the scale, also avoid exposing them to frost. The longer low temperatures affect the cells, the greater the risk of capacity loss and dangerous cell damage, so do not store batteries in an unheated part of a building in winter.
- Adhere to the specifications of the respective manufacturer and technical product data sheets.
- Prevent external short circuits (protection against short circuit of the battery terminals, for example by fitting caps).
- Prevent internal short circuits (protection against mechanical damage).
- Immediately remove any damaged or defective lithium battery from the storage and production area and store this temporarily at a safe distance or in a separate area with fire protection until its disposal.
- Always check that the cells are undamaged which specifically means: a scratch is fine, no problem. If the battery fell down, check whether it has been dented, deformed or perforated.

If all three apply, remove it instantly! If it is swollen, treat it like a bomb – it now is one! The best way to transport such a damaged cell is in a fireproof box, but if this is not available a metal wastebasket covering the cell in sand (not water, for chemical reasons) is a 'quick and dirty' and comparatively safe option.

Keep Cool

Also very bad for lithium cells is a rapid temperature increase during charging or a suddenly empty battery. Charging is seen as most critical and should preferably happen only under surveillance and on a fireproof base – please remember this also for your mobile phones and other devices at home. It should also be ensured that batteries have not previously been deeply discharged (such as by limiting the storage time before re-charging them to six months).

The VdS have published a battery classification leaflet entitled 'Sprinkler Protection of Lithium Batteries'. This can also be downloaded without charge - the link is shown below. This aims to make the results of fire tests more transferable. Since weight and size can vary greatly due to the different cell formats (pouch cells, for example) a classification by energy content per storage unit (pallet) is more useful, classified according to power (Ah). As the voltages can also vary greatly, the power has been converted to kWh.

What To Do in Case of Fire – Very Quickly:

A classic saying applicable to many human activities is: "Anything that can go wrong will go wrong". So if a battery catches fire,

what is to be done? Fortunately, the only extinguishant needed for a developing lithium battery fire is simple water. If efficient fighting of an early-stage fire succeeds within the first few minutes – with rapid and targeted water application –there is a good chance of getting control of the fire. Unfortunately, a fire involving lithium batteries usually gets fully out of control within around eight minutes, which is much less time than is usually needed to detect the fire, sound the alarm, then extinguish it.

Sprinklers Do Work

A caveat to what is written here is that battery power is increasing by approximately 10 % every year, so all current safety plans and some aspects of this article might be totally obsolete in the near future. Nevertheless, intensive VdS testing has proven in practice that the good old water sprinkler extinguishing systems - best of all VdS-approved – are effective protection if they are designed so that water will reach the source of fire quickly. Unfortunately, standardized solutions for this relatively new type of battery do not yet exist - a case-by-case evaluation is necessary at the moment. Check the VdS 3856 guidelines for assistance.

Some of the main findings are summarized for you here. Strong cooling is essential – water is favored as the extinguishing agent for this. It is also necessary to cool batteries that are not yet in the fire because of the thermal runaway danger (stored energy can be released in an uncontrolled manner). So far, only rapid cooling with large quantities of water has proven effective.

As for storage, check that all devices are in drenchable packaging, and that the stored energy per packaging unit (e.g., pallet) should not exceed 50 kWh. The rack design should be according to VdS CEA Planning Guidelines 4001, K.7.1 and sprinkler protection provided on every rack level. Of course, only batteries with proof of testing according to UN 38.3 should be stored, using only batteries from reputable manufacturers with appropriate quality and safety standards.

We hope this summary was helpful to our joint cause of protecting human life, the environment and expensive goods from destructive fire and smoke – best regards to all those working for our safety!

Author

Dr. Florian Scharr,Coordinator for Customer Relations at VdS

CONTACT

VdS Schadenverhütung www.vds-global.com



The creation of clear, transparent audit trails boosts the safety of multi-residential properties and reassures both owners and building residents. Having a reliable and up-to-date source of specification information is essential to maximize the effectiveness of the inspection cycle. As at many other stages of the building lifecycle, digitalization can be an ideal solution.

In the UK, Doorview offer their customers wide-ranging advice on the specification of doors, including timber and steel doors or screens, and architectural ironmongery. They also conduct fire inspections all over the UK, a particularly sensitive point since the post-Grenfell public inquiry¹.

Doorview sought a solution for this job that would streamline their interaction with customers, making their inspection service even more effective and efficient for clients in the multi-residential sector and beyond. Digitalizing inspection reports could make workflow more efficient and further improve the service they provide, also for recommendations of corrective work required at a site.

Maintaining the Golden Thread

Doorview selected Openings Studio, Assa Abloy's new desktop and mobile application as the optimal solution to streamline the fire door inspection process and provide the indepth reporting they sought. With the Openings Studio app, Doorview helps to maintain the Golden Thread², a building's single source of truth. "The app allows us to instantly share

fire door inspection reports with our clients," explains Doorview's Jody Purcell.

The mobile app also enables Doorview to instantly share a remedial action list, which reassures the client that their building is compliant and safe for all the residents, service providers and other tenants. Working digitally increases the transparency of the entire inspection and compliance process.

Creating Transparency for a Building's Lifetime

Openings Studio software has become a vital, constantly updated source across the full life-cycle of the building. Widely used by architects and building specifiers to ensure accuracy and efficiency in design and construction, the Openings Studio mobile app now also equips inspectors with powerful, speedy and transparent reporting tools. It achieves this by leveraging the same information from the beginning of the design phase through to maintenance of the completed structure.

Thanks to the training provided by Assa Abloy specification experts, Doorview were able to use the specification information stored in Openings Studio to speed up inspection work. It simplified the process of creating and delivering the quotation for any corrective work required for compliance, and subsequent updating of their report with images once the work was complete. Openings Studio has helped Doorview to optimize the service they provide.

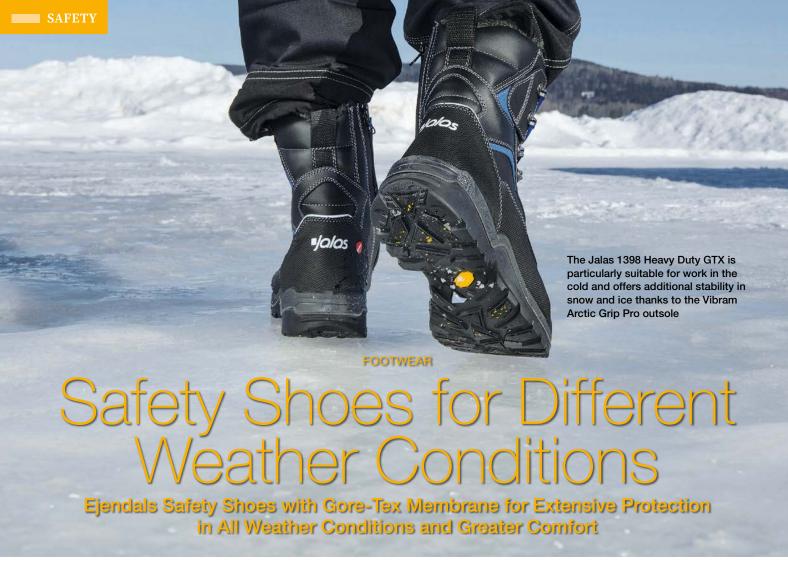
- [1] www.gov.uk/government/publications/independentreview-of-building-regulations-and-fire-safety-finalreport
- [2] www.hse.gov.uk/building-safety/golden-thread.htm



To learn more about Openings Studio, a free solution guide can be downloaded at: https://bit.ly/40Er8bY

CONTACT

Assa Abloy Opening Solutions EMEIA www.assaabloy.com



To ensure that employees are well equipped in all weather conditions, Ejendals now has the new Jalas Exalter and Jalas Heavy Duty safety shoes in its portfolio with a Gore-Tex membrane. They not only provide protection against wind and weather, but also give a good feeling when worn. Veronika Seliger, Technical Support & Training at Ejendals.

here is no such thing as the one safety shoe that provides optimum protection and safety in all weather conditions. That's why Ejendals has developed four models that are uniform in their basic functions and appearance, but each contain special features tailored to the season. For example, the Jalas 1398 Heavy Duty GTX is particularly suited to cold weather work and offers additional stability in snow and ice with its Vibram Arctic Grip Pro outsole.

GIT SECURITY: Ms. Seliger, what was the background to the development of new safety shoe models?

Veronika Seliger: Central Europe has a changeable climate throughout the year. Winter can be very cold and snowy. Especially in spring and fall, continuous rain with cool temperatures is not uncommon. In summer, temperatures are milder, but wet conditions are also to be expected. In addition, a breathable shoe is essential, especially in warm temperatures. The one

safety shoe that provides the optimum in protection and safety in all weather conditions does not exist.

That's why we have developed four models that are uniform in their basic functions and appearance, but each contain special features tailored to the season. Four seasons, four safety footwear solutions - it fits! The Jalas Exalter GTX and Jalas Heavy Duty GTX series are our premium safety range for Nordic weather conditions, covering a very wide size spectrum (34-47).

Is there anything that connects all four shoe models?

Veronika Seliger: First of all, it's the Gore-Tex membrane found in the new Jalas 9988 Exalter GTX, Jalas 9968 Exalter GTX, Jalas 9998 Exalter GTX and Jalas 1398 Heavy Duty GTX safety shoes. For decades, this material has been the epitome of waterproofness combined with very high breathability. As a Scandinavian company, we specialize in weather protection. It was clear to us that if we were to develop new safety footwear

with comprehensive wetness protection, it would have to be equipped with Gore-Tex all around.

Apart from the Gore-Tex membrane, are there other features that link the shoes together?

Veronika Seliger: As a rule, an employee has at least two pairs of shoes - for milder weather and for lower temperatures. They expect the same quality and functional features from their work shoes. We attach great importance to wearing comfort in all our products. Accordingly, all models have a similar design.

For example, the Boa closure system is placed on the side to avoid uncomfortable pressure points in squatting or kneeling positions. In addition, with Jalas FX3 Supreme, we have integrated a multilayer cushioning system - consisting of a functional insole, a PU midsole and the Vibram outsole. Due to this structure, the weight is evenly distributed on the foot and the integrated Poron (polyurethane foam)

absorbs 95% of the impact energy. Last but not least, all models are equipped with EN 20345 safety class S3 features, including a lightweight aluminum toe cap and flexible PTC nail penetration protection.

Now we have already heard a lot about the similarities of the shoe models. What exactly are the differences?

Veronika Seliger: As already mentioned, with our new products we cover all weather conditions that can occur throughout the year. For the milder months, when it may well rain, we have designed the Jalas 9968 Exalter GTX safety shoe and the Jalas 9988 Exalter GTX with a half-height upper. On the one hand, the microfiber upper and the Gore-Tex membrane ensure that the foot is protected from outside moisture. On the other hand, even during sweaty activities, a constantly pleasant and dry climate prevails inside the shoe.

Especially for the transition months in spring and autumn with a very high probability of precipitation, the safety boot Jalas 9998 Exalter GTX is the perfect companion. The medium cold insulation creates an optimal protective barrier in bad weather and damp ground. The full grain leather, functional textile and microfiber upper delivers comprehensive protection and supports the foot in every movement.

Slowly but surely we are approaching the cold season again!

Veronika Seliger: That's right. You should be prepared for that. With the Jalas 1398 Heavy Duty GTX, working in freezing cold and high humidity is no problem. All our experience with Nordic weather conditions has gone into the design development. The fully integrated lining keeps feet reliably warm even in sub-zero temperatures. In addition, the robust upper made of fullgrain leather and functional material provides excellent protection even in adverse working conditions. To ensure stability on slippery surfaces such as ice and snow, this model has the Vibram Arctic Grip Pro outsole.



Ejendals www.ejendals.com





Jalas 9988 Exalter GTX



Jalas 1398 Heavy Duty GTX



All four models feature a Boa closure, as seen here on the Jalas 9988 Exalter GTX



For transitional months with lots of precipitation, the Jalas 9998 Exalter GTX offers comprehensive protection

Jalas 9968 Exalter GTX

Jalas 9988 Exalter GTX

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MACHINE AND SYSTEM SAFETY

The Key to Safe Food

Flexible Access Management for the Food Industry

Complying with strict safety and quality standards is the top priority in the food industry. Many manufacturers, including well-known companies such as Löwensenf and Ritter Sport, have opted for the freely programmable Electronic-Key-System EKS from Euchner to help them meet these requirements. The EKS enables efficient access control in different production areas, be it in raw ingredients warehouses, in quality control or in recipe management.

ood safety is hugely important for any consumer. High standards for quality and safety are therefore essential in the processes used during product manufacturing. The International Food Standard (IFS) is a significant global standard that is regularly updated and expanded. Companies with IFS certification must undergo periodic audits to prove that all of their raw materials and ingredients are traceable, from the finished product to the relevant suppliers. In addition to this, food manufacturers must ensure that their raw materials, ingredients, processes and packaging meet the applicable regulations and directives and provide documentation to prove this compliance.

Manufacturers must also make every effort to rule out any risk of their products becoming contaminated or adversely tam-

pered with. Safety standards require critical manufacturing processes to be monitored by allocating access rights, which in many cases is done electronically. This is where many food manufacturers turn to Euchner's highly effective Electronic-Key-System EKS. The device functions as an intelligent alternative to systems that require a password. The RFID-based EKS features the main advantage of being freely programmable and therefore highly versatile. As a specialist for industrial safety engineering, Euchner also offers versions with different performance categories in its product range, from the simple EKS Light with integrated Electronic-Key detection and digital outputs to a version with a data interface for greater data transfer and for optimum flexible handling.

The Perfect Choice for the Food and Pharmaceutical Industries

EKS is ideally suited to a broad range of industry applications. Euchner has expanded the system to include a special Electronic-Key adapter design for use in the food and pharmaceutical industries. The materials and the product design were specially adapted for applications in hygiene-sensitive areas. The main priority was creating a robust device that is easy to clean and has high resistance to highpressure water jets, ensuring that it provides the highest degree of protection IP69K for electric equipment. This means that the EKS can easily withstand regular exposure to the high temperatures and pressure used in hotwater steam-jet cleaning. The housing of the EKS Electronic-Key adapter is made from a high-molecular plastic that is specially

Euchner's Electronic-Key-System
 EKS enables efficient access
 control in different production
 areas in the food industry, be it
 in raw ingredients warehouses,
 in quality control or in recipe
 management. Euchner can
 provide the right solution for any
 requirements



The modular Electronic-Key adapter for the EKS Light can be seen on the right-hand side of the operating unit



Ritter Sport's raw ingredients are unloaded at the right receiving station and into the right container via a programmed EKS chip

approved for the food industry and meets the requirements of FDA conformity.

What's more, the system is extremely easy to clean thanks to its closed design. EKS enables access control without any need for a keyboard, which can be problematic in a hygiene-sensitive environment. The Electronic-Key and the read/write station communicate contactlessly: all the user has to do is place the Electronic-Key. The same goes for energy transfer between the two components.

Quality Assurance with the EKS Light at Löwensenf

Löwensenf in Düsseldorf uses the EKS Light, the simplest version of Euchner's Electronic-Key-System. This is a read-only system with internal user identification for small, decentralized applications. Users identify themselves simply by placing their Electronic-Key with RFID transponder onto the Electronic-Key adapter. If the identification is successful, the system grants the user the access rights assigned to them - in this case those allowing access to the quality assurance area. This is where cameras monitor each tube of mustard to check that the printed production data and the tube fold are acceptable before the tubes are transferred to the packaging machine. "It was particularly important for us to protect the system parameters," explains Rainer Lang, Technical Director at long-standing food manufacturer Löwensenf. According to Lang, their control systems would have allowed password functions, "but passwords soon become common knowledge." This is why he favored the Electronic-Key, which allows users only selective access to the system parameters for the camera system - a reliable prevention against incorrect operation of the QM system and packaging machinery.

The EKS Light has four different access rights. The first is for basic users who are allowed to operate the machine's basic functions without a chip; the second is for technicians who are allowed to change individual settings once they have been successfully identified; and the third is reserved for quality management, while the fourth unlocks administrator rights.

Controlling Raw Materials Logistics at Ritter Sport with the EKS Data Interface

Germany's well-known chocolate manufacturer Ritter Sport uses the EKS with data interface at its plant in Waldenbuch, South Germany. The Electronic-Key-System ensures that ingredients and raw cocoa are stored in the right containers when they arrive at the raw ingredients warehouse. This would normally require 32 key-operated rotary switches and a great deal of complex administration. Euchner's EKS is a significantly more efficient solution as it needs only four read/write stations plus the Electronic-Key chips.

When the raw ingredients arrive, an EKS chip is issued. For every drop-off point and container, there is one corresponding programmed and marked chip. Only when the read device has clearly identified the chip's code is access granted. The delivery can then be unloaded at the right receiving station and into the right container. The access rights are recorded along with other information in a central database. The read/write devices are coupled via Profinet to the control system, which can process all relevant data. This makes it very easy to track who was given access to a specific delivery station, when and for how long. In addition to Profinet, interfaces are available via USB, Ethernet, TCP/IP and Profinet

EKS with Data Interface for Comprehensive Access Management in the Bakery Industry

The EKS version with data interface also offers easy-to-use, comprehensive access management. The bakery industry is a highly suitable field of application. Industrial bakers in particular have a lot to gain from the many potential uses of the EKS system. For example, it can be integrated into bakery machines used for processing dough-based products such as bread, pretzels and croissants.

Possible applications range from individually accessible recipe management with information on ratios, ingredients and temperatures encoded onto the Electronic-Key, to the associated authorization to change the particular products being made. Once the relevant information has been processed, the control system can control the process completely automatically. The EKS system allows access rights to be clearly assigned and enables users to understand disruptions in production so that they can be avoided in future. This helps increase machine availability as well as productivity and quality.

CONTACT

Euchner GmbH + Co. KG www.euchner.de



Municipal Camera System

Hanwha Vision has provided ten PNO-A9081RLP and ten XNO-6123R/RW cameras, alongside an SSM recording server, decoders, and a TID-600 intercom to the city of Brandýs nad Labem-Stará Boleslav in the Czech Republic. For this popular tourist destination with around 20,000 citizens, the city council wanted to install ANPR cameras to better understand the flow of vehicles entering and exiting specific areas of the city and improve traffic management. This data can also be used in spatial planning. Control room staff and frontline police officers are provided with high-quality footage of vehicle makes, models, colours and license plates. The Police of the Czech Republic and crisis management authorities also have access to the system as part of their close cooperation with the city.



i-PRO announced 24 new compact dome camera models with powerful Edge-Al capabilities at an attractive price level. The new models offer wider scene coverage, vandal resistance, powerful edge-based Al analytics, and flexible deployment options for every budget. Available in 2MP and 4MP resolutions, the efficient designs deliver the smallest compact domes and highest cyber security protection available. Small in size but big in capabilities, both X and S series models support up to two Al analytic apps, providing the industry's widest range of analytics. As with all i-PRO cameras, the new line of compact domes is fully NDAA compliant, with TAA compliant versions also available. The new line of compact domes extends the wide-angle lens to enable monitoring of a large area without blind spots, delivering a horizontal and vertical field of view up to 132° - the widest in the industry. Advanced video analysis with access to AI VMD (video motion detection) and i-PRO Active Guard capabilities ensure popular VMSs such as Genetec, Milestone, and i-PRO's VMS Video Insight receive the Al generated descriptive metadata needed for deep forensic search or real-time alerts. Built-in IR extends low light performance, ensuring detailed image capture even in the dark. A built-in microphone supports sound recording and audio analytics.

https://i-pro.com/eu/en

Asset Management Solutions

Morse Watchmans, the specialist in key control and asset management systems, is showcasing its asset management solutions at Secutech Thailand 2023, November 1-3 at the Bangkok International Trade & Exhibition Centre (BITEC). The company's SmartKey Locker Touch System for the storage and management of laptops, cash trays, wallets, cell phones, hand-held radios, and other valuables will be on display. This is ideal for securing, managing, and tracking critical assets such as electronics, personal devices, issued equipment, cash, and more. Using the TrueTouch software, administrators can set up specific schedules for access to limit access to certain assets to certain individuals based on qualifiers such as time of day, day of the week, job title, and more. If an asset is not returned to its designated locker as scheduled, the system will also trigger automatic notifications via emails and text messages to supervisory personnel. www.morsewatchmans.com

Webinar: Easy IP Video Surveillance

In video surveillance, the use of computers is often undesirable, not very economical, or even impossible for reasons of space. Eizo offers various solutions especially for this purpose that meet a wide range of requirements. In a webinar on 28th November 2023, Oliver Nachtigal, Business Development Manager Security and Surveillance from Eizo will comprehensively present the company's IP decoding products that stand for easy installation and computer-less operation. He will explain the concept with its basic and expansion options, describe the integration into leading video management systems, and provide an insight into real-life applications based on customer projects. To register for this webinar, please follow this link: https://register.gotowebinar.com/register/5983099610033157975?source=GIT

www.eizo.de

Enlighted Adds Powerful AI Capabilities for the IoT

Enlighted, a property technology company owned by Siemens, has expanded its use of artificial intelligence (AI) in its Location Services solution, and added two new partners to the Enlighted AI partner ecosystem. The Real Time Location System (RTLS) tracks the location and movement of assets and badges in buildings, using existing Enlighted intelligent lighting infrastructures. With the introduction of AI machine-learning models, the accuracy of finding assets and personnel badges is improved to greater than 98 percent, empowering businesses across industries to optimize their operations and better control inventory. High levels of accuracy are especially critical in healthcare and manufacturing, where understanding exact location is essential for many critical use cases. The enhanced system reduces implementation costs dramatically via existing Bluetooth-enabled lighting control sensors.

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