

GIT

SECURITY

EMEA

MAGAZINE FOR SAFETY AND SECURITY

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Security Essen 2022

Intersec Building 2022

COVER: Salto Systems:
Homelok - Smart Access for
Residential Living

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Trade Fairs are Back



New impulses, personal exchange and innovative solutions: The yearning for the industry meeting places for security, safety and building technology is great and it is good to know that several trade fair opportunities are approaching.

Late in September Security Essen will present products and solutions in the field of security technology and services from September 20 to 23. We give you a preview of the show highlights starting on page 8. If you come to Essen, make sure to visit us in Hall 5, Stand 5A44

Light + Building Autumn Edition is approaching, too. From October 2 to 6, the leading international trade fair will take place in Frankfurt, Germany, as a special autumn edition. Security has become so important for the show in recent years that exhibitors and visitors are offered their own platform at the exhibition center in the form of Intersec Building in Hall 8.0.

On Wednesday, October 5th, starting at 4:00 p.m., the trade fair organizers and GIT SECURITY invite you to a networking event under the motto "GIT Together". The event serves the informal exchange of security professionals and interested parties and will take place in the area of the Intersec Forum in Hall 8. Food & drinks will be served and GIT SECURITY will provide interested parties (subject to availability) with free tickets for the trade fair and the event: Just send an e-mail with the keyword "Intersec GIT Together" to GIT-GS@Wiley.com. During the show, we will be in Hall 8.0 at stand J75.

The whole team is looking forward to seeing you at one of these shows.

Stay safe and enjoy reading this issue!

Heiko Baumgartner
For Wiley's Safety and Security team



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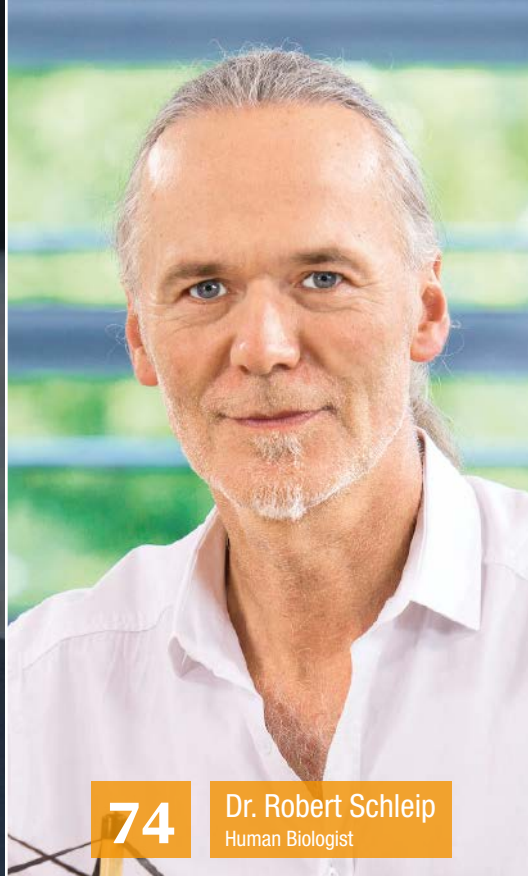
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IPS Intelligent Video Software

IPS NextGen VideoAnalytics.
Keeps an Eye on Everything.

All analytics in one solution to protect your premises from unwanted guests.

Modular Access Control System at Polyclose 2022

CES was exhibiting at Polyclose from 31 August – 2 September 2022 in Gent, Belgium. Their flagship product that was exhibited is AccessOne. It combines conventional access control and mechatronic locking technology. Exchange between the online access control system and the offline locking devices occurs via ID cards. CES offers solutions for all doors, access points and furniture locks. The software offers integrated functions and interfaces to many of the systems present in the building, such as time registration, personnel management and cash systems, and thus supports many operational security applications.



www.ces.eu

Securitas Completes the Acquisition of Stanley Security

The acquisition of Stanley Security is now completed and is consolidated into Securitas as of July 22, 2022. Securitas will present the strategy of the new Group as well as new financial targets on August 24, 2022. On December 8, 2021, Securitas announced it had signed an agreement to acquire the Electronic Security Solutions business from Stanley Black & Decker Inc. ("Stanley Security") for a purchase price of MUSD 3 200 on a debt and cash-free basis. The acquisition is expected to create compelling sales growth and be immediately operating margin accretive to the Group. Securitas anticipate significant commercial opportunities and innovation potential with over 500,000 existing, as well as new, clients in the attractive BUSD 70 electronic security market. They will create a leading platform to accelerate growth and synergies and expect substantial operating margin improvement over time. All regulatory conditions were approved as communicated on July 14 and the transaction has been completed.

www.securitas.com

Security System for Guildford College



Mul-T-Lock has worked closely with K.B.O Fire & Security to upgrade the security at Guildford College, creating a dedicated master key suite for the ultimate peace of mind of staff, pupils and visitors. Guildford College is the largest further and highest education college in the Surrey area, with approximately 3000 students and offers courses at all

levels. Success rates are higher than national benchmarks with many students operating with the local community on a regular basis. Controlled and secure access is a high priority for the Estates and Facilities team, who sought the advice of K.B.O Fire & Security to undertake a comprehensive security overview. K.B.O Fire & Security offered a number of innovative ideas to ensure complete security and a smooth operating system throughout the College site. The resulting master key suite was designed and installed using Mul-T-Lock's high-security MTL400 patent-protected solution, which combines advanced technologies with enhanced key copy control and maximum resistance to all forms of lock manipulation. With up to 90 cylinders installed in a scalable design, the master key suite system was installed quickly and efficiently to ensure minimal disruption to learning timetables. Lance Harding of K.B.O Fire & Security added: "With Guildford College, we like to consider ourselves as part of this team, where we can really understand the bespoke requirements. The benefit of working in this way is allowing for the flexibility of access, including accounting for the large number of part- and full-time students alongside the wider community who all use the facilities. Here a master key system was the best choice, and using Mul-T-Lock enabled total patented key control to keep the college, and all who attend safe and secure."

www.mul-t-lock.com/uk

International Security Expo: 2022 Conference Programme Unveiled

International Security Expo has unveiled its CPD-certified thought leadership programme ahead of its return to Olympia, London from 27-28 September. This year's programme has been meticulously curated with guidance from the event's 70-person strong expert Advisory Council, comprising the most credible Government, industry and leading academic stakeholders, to ensure it accurately reflects the industry's ever-changing threats, challenges and debates. This year, security professionals can learn from world-renowned speakers who will deliver thought-provoking talks across three theatres: Global Counter Terror & Serious and Organised Crime Summit, International Security Conference and International Risk and Resilience Conference.



Strategic Insights from Influential Industry Leaders

Attendees will be able to hear from the key drivers of the landmark legislation, including the tireless campaigner, Figen Murray, whose son Martyn was tragically killed at the Manchester arena terror attacks in 2017; Shaun Hipgrave, Director of Protect and Prepare, Homeland Security Group (HSG), UK Government Home Office; and a senior member of the Publicly Accessible Locations (PALs) team, also part of the HSG. Other key topics set to be discussed include international counter terror priorities. Speakers include Lina Kolesnikova, Security Expert, ICPEM, who will discuss key trends and developments following terror attacks in the EU. Fellow speakers include a Senior Agent from the Federal Bureau of Investigation (FBI) who will discuss the US's role overseas, and a Senior Counter Terror Police Officer who will offer a UK perspective.

Security Best Practice, from a Plethora of Perspectives

On the first day, talks will focus on Publicly Accessible Locations (PALs), set to be a major focus for the industry throughout 2022/23 with the imminent Protect Duty legislation. Speakers will address the practical issues surrounding its implementation, wider planning, and insights into the application of current recommendations in venues such as iconic buildings and concert halls.

www.thesecurityevent.co.uk

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EVENT

Program Highlights of Security Essen 2022

Herbert Reul, the Minister of the Interior of North Rhine-Westphalia, has Announced his Visit on the Second Day of the Fair

Security Essen will present innovative products and solutions in the field of security technology and services from September 20 to 23, 2022. For trade visitors, not only the walk through the exhibition halls is worthwhile but also the participation in the extensive supporting program. In various forums, experts will report on current challenges facing the industry and present solutions. Special theme days are planned for public authorities, young professionals and visitors from neighboring BeNeLux countries.

For more than 40 years, Security Essen has been the leading trade fair for civil security and thus also a meeting place for knowledge exchange. At the new Digital Networking Security Conference in Hall 7, experts will report on current incidents, important interfaces between corporate and IT security, legal requirements and practical implementation examples on the first two days of the fair.

The Speakers of the 14 Presentations Will Cover Topics Such As:

- “Between cybercrime and cyberwarfare — why cybersecurity is a matter for

the boss” (Thomas Köhler, non-fiction author)

- “DDOS attacks via IoT devices” (David Walkiewicz, Director Test Research at AV-TEST)
- “Next Level Security Awareness Training” (Alex Wyllie, founder and CEO of IT-Seal)

In addition, attendees can expect valuable recommendations for action in managing cyber crises (Dr. Holger Kaschner, Information Security Consulting, DCSO German Cyber Security Organization) and advice on the secure use of cloud applications (Oliver Dehning, Head of TeleTrust

AG Cloud Security). The DNS conference is organized in cooperation with the trade journal “kes”.

Security Experts Forum

In the Security Experts Forum in Hall 6, the exhibiting companies at Security Essen will present the latest product innovations and provide an insight into practical experience on a daily basis, while the Fire Protection Forum in Hall 7 will provide comprehensive information on fire prevention and fire fighting.

The titles of the total of ten lectures on September 22 and 23 are, for example:





Security Essen takes place September 20 to 23. Pictured are the Gruga Hall and Messehaus Ost in Essen



A comprehensive supporting program complements the trade show with numerous expert presentations



▲ Herbert Reul, Minister of the Interior of North Rhine-Westphalia

- “New Technologies and Innovations in Fire Protection – News from Research and Development” (Dirk Aschenbrenner, Director of the Dortmund Fire Department)
- “Use of Drones in Fire Protection” (Christian Liebezeit, m-c-quadrat)
- “Fire Protection in IT Basic Protection – Linking Safety and Security” (Lars Oliver Laschinsky, Institute for Safety and Hazard Training).

The partner of the Fire Protection Forum is the Essen House of Technology. The presentations in the Digital Networking Security Conference and the Fire Protection

Forum will be held in German and English, the presentations in the Security Experts Forum in German only.

Security Essen Theme Days

Security Essen counts important decision-makers and high-ranking politicians among its guests. The Minister of the Interior of North Rhine-Westphalia, Herbert Reul, and the Minister for Economic Affairs, Industry, Climate Protection and Energy of North Rhine-Westphalia, Mona Neubaur, have announced their visit on the second day of the fair. At the same time, the Authorities and CSO Day will be held for the first time, which is aimed at those responsible for security and Chief Security Officers (CSOs) at public institutions. Representatives of public authorities will receive discounted admission.

In cooperation with the German Federal Association of the Security Industry (BDSW), the Training and Further Education Day will be held on the first day of the trade fair. Trainees, students and retrainees in the security industry are invited to attend. The program will enable them to make valuable contacts and get to know future fields of work better.

On BeNeLux Day (September 21), Security Essen and the German-Dutch Chamber of Commerce invite visitors from Belgium, the Netherlands and Luxembourg in particular to network. A specialist forum will accompany the day.

CONTACT

www.security-essen.de

The award presentation for the winners of the GIT SECURITY AWARD will take place starting at 4 pm on Tuesday, September 20



CERN Secures Large Hadron Collider with Iris ID

The European Organization for Nuclear Research, best known as CERN, announced the reactivation of its Large Hadron Collider after a three-year hiatus for repairs and upgrades, continuing their quest to understand the fundamental building blocks of the universe. Located near Geneva on the Swiss-French border, the CERN's security team employs Iris ID's advanced iris recognition solution to maintain the safety and security of the facility, its invaluable assets, and the host of renowned international scientists and staff registered for access to the facility. IrisID iris recognition technology provides fast, contactless and highly accurate identity authentication for over 10,000 registered individuals who have been cleared for access to CERN over the years. CERN currently has IrisID iris readers installed at the main entry and various access points along the 27-kilometer circular Large Hadron Collider as well as deployments at access points to the radiological area of CERN's Proton Synchrotron (PS) accelerator area.

www.irisid.com

New PureTech Patent Automates the Verification of Alarms

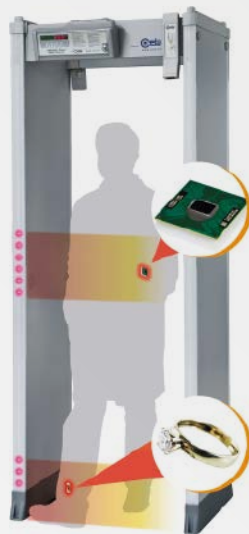
PureTech Systems announced the issuance of a patent by the United States Patent Office – "US Patent 11,373,511 for Alarm Processing and Classification System and Method." This is the 16th patent issued to PureTech Systems. A major issue plaguing central monitoring companies is false safety and security alarms from video-enabled systems. False alarms are not only time-consuming to assess and process, but they take essential resources away from taking action on real safety and security events. PureTech's newly awarded patent automates the verification of alarms and passes on only validated alarms to Central Monitoring personnel for further action. With the use of AI Deep Learning enhanced video analytics for false alarm rejection, PureTech's PurifAI solution can eliminate up to 95% of false alarms. PureActiv PurifAI is a system and method for processing alarms including data received from third-party data sources. PureActiv will process the visual data to detect and classify objects in the area of interest. If an object satisfies the classification, according to a set of pre-defined rules, a positive alarm will be issued. If the object is in non-conformance with the pre-defined criteria, a false alarm will be logged but not forwarded for action.

www.puretechsystems.com

Loss Prevention of Metal-Containing Objects

Metals are a component of numerous products such as jewelry, chips and vehicles. Loss of valuable raw materials and products can lead to delivery delays and high replacement costs for the companies concerned. However, until now, checking people on factory premises was only possible on a random basis and cost security personnel a lot of time. The SMD601 Plus Profiling from Ceia provides a remedy: the walk-through metal detector detects deviating metal concentrations on persons between entering and leaving the security area with high precision. Prices for intermediate goods in Germany have continued to rise in recent years: According to the Federal Statistical Office, the price increase for metals in November 2021 was around 37.8 percent compared to the same month of the previous year. In particular, electronic components such as chips or graphics cards have increased massively in value, so a loss of just a few components would hit businesses hard, regardless of the sector. The same applies to jewelry made of precious metals or precision tools. "Until now, it was hardly possible to comprehensively prevent theft in larger companies," explains Lars Heckmann, Business Development and Marketing Manager at Ceia. "At most, spot checks were carried out at a high cost when employees changed shifts."

www.ceia.net



Video and Access Security for University of Massachusetts Amherst

Salient Systems has announced that UMass Amherst, the flagship campus of the University of Massachusetts system, has standardized its video surveillance operations on the Salient CompleteView Video Management Platform, enabling campus security and safety staff to protect the campus population of 32,000 with a 24/7 view of its video surveillance and integrated access control operations. Using CompleteView, UMass Amherst is centrally monitoring its network of nearly 1,700 IP cameras and legacy analog cameras safeguarding the 51 residence halls and 225 buildings that make up the campus environment. With 1,500 acres of ground to cover, UMass Amherst wanted to optimize its video system – and the corresponding integrations available through CompleteView – to enable security and safety staff to remotely assess a situation or diagnose an alarm from the school's access control platform, the Tyco Software House Ccure 9000 from Johnson Controls.

www.salientsys.com



Sepura Acquired by UK Private Equity Group Epiris

Sepura has announced that it has been purchased by London-based private equity group Epiris. The group's Epiris Fund II purchased Sepura from Hytera Communications. The sale comes as critical communications supplier Sepura marks its 20th anniversary, having become market leader in over 20 countries with over two million devices deployed worldwide. Its portfolio of Tetra radios and accessories is used globally by public safety users in the police, fire and ambulance services. It has also successfully expanded into the commercial space, supplying transport, mining, oil & gas, and utility companies. Steve Barber will continue to manage Sepura as CEO whilst Malcolm Miller, with whom Epiris previously worked as Chairman of Audiotonix, will join the company as non-executive Chairman.

www.sepura.com

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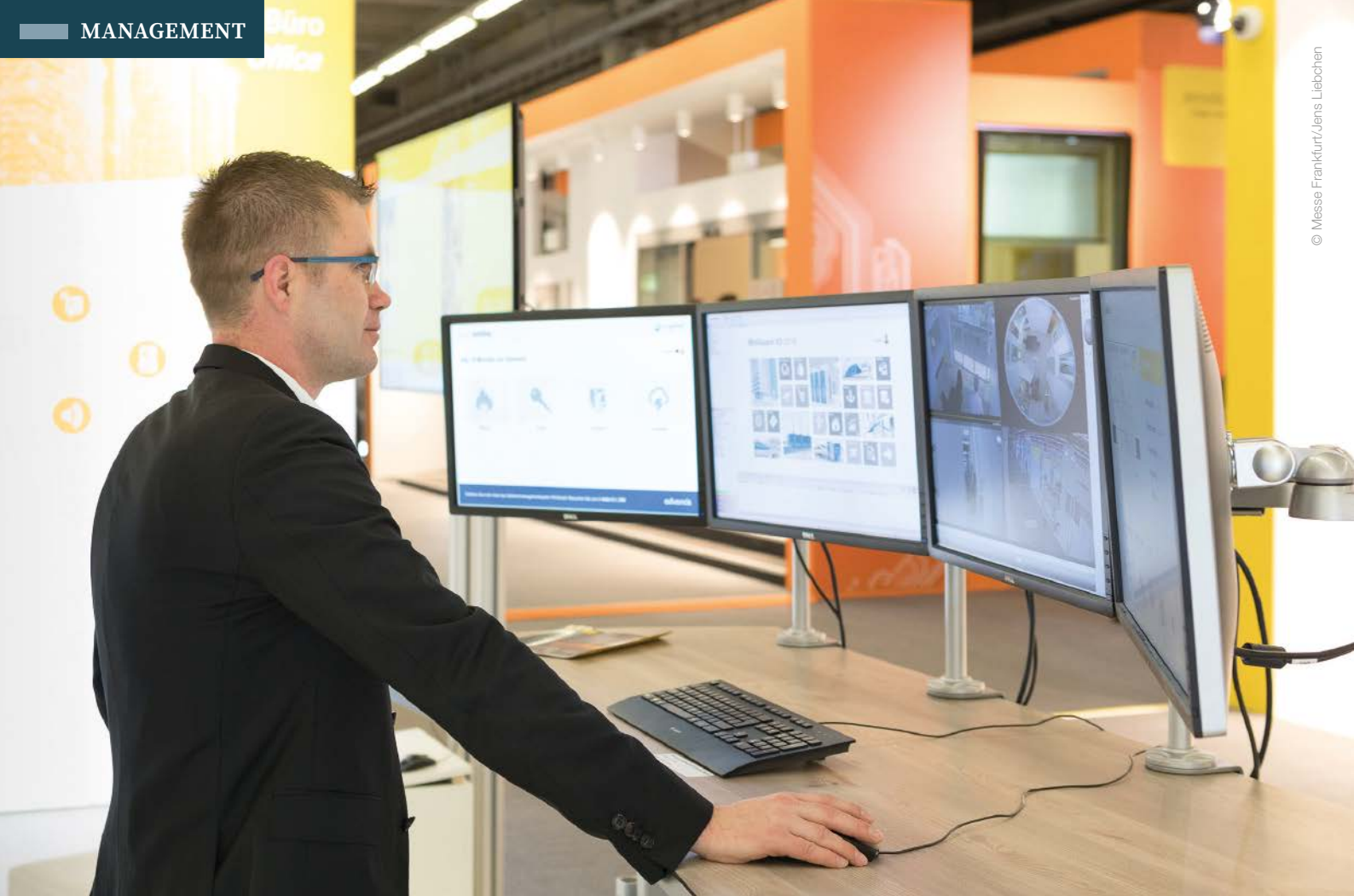
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WE'VE GOT YOUR BACK





New impulses, personal exchange and innovative solutions: The yearning for the industry meeting place for lighting and building technology is great, the date of the Light + Building Autumn Edition is approaching. From October 2 to 6, 2022, it will be that time again, when the leading international trade fair will take place as a special edition. The anticipation is spurred by the successful start of many international trade fairs. The restart of the industry comes at a time that is characterized more than ever by uncertainty and crises. Light + Building Autumn Edition offers the opportunity to discover the latest innovations and trends and to position oneself optimally for the demands of the times.

EVENT

Light + Building Autumn Edition

Intersec Building and Intersec Forum on Networked Security

The product spectrum of the world's largest trade fair for lighting and building technology ranges from lighting and luminaire design to technical building infrastructure and building automation to intelligent energy management. In the smart home and smart building, networked security is an integral part and, as a result, an important and proper area of Light + Building. Accordingly, offers relating to security technology products and systems for the building can be found at a whole range of exhibitors at Light + Building, but the topic has become so important in recent years that exhibitors and visitors are offered their own platform at the exhibition center in the form of Intersec Building in Hall 8.0. The topics of video technology and access control are equally

present here as data protection and fire protection. All facets of security technology will be the focus of the Intersec Forum congress in Hall 8.

Highlights Intersec Forum

Intersec Forum starts on the second day of the trade show in the Intersec Building area in Hall 8.0 and conference participation is included in the ticket price of Light + Building Autumn Edition. Now in its fifth year, the conference for networked security technology offers four intensive conference days of expert presentations and discussions. Decision-makers from the planning, installation and operation of networked safety technology systems will take advantage of the opportunity for information and professional exchange

with manufacturers, developers and researchers. The partner for conference and topic planning is ZVEI-Services.

From October 3 to 6, 2022, from 10 a.m. to 4 p.m. each day, discussion panels, technical presentations and exhibitor presentations will focus on the challenges of integrated safety technology in the building of the future. The presentations will be simultaneously translated into English. The conference topics at a glance:

Monday, October 3, 2022: Business Models / Semantic Interoperability

Security applications, building automation systems and communication systems – these are three examples of large trades and their networking in buildings. The challenge is to operate them interoperably. Two discussion panels will be devoted to these challenges:

- “Who owns the future in the security technology market?” The panel will include Dr. Peter Fey, Managing Director, Wieselhuber & Partner; Alexander Yeomans, Smart Infrastructure Solutions & Services Portfolio, Siemens Germany; and other speakers.
- “Cacophony in Buildings and What Does Security Technology Have to Say?” Featuring, among others, Axel Schüßler, Co-Founder and CEO, IoT connectd.

Tuesday, October 4, 2022: Video Technology / Artificial Intelligence (AI)

The second conference day is all about the existence and evaluation of massive digital data. Automated data analysis in real time – using Artificial Intelligence (AI) – and cloud-based integration of systems bring as yet unexploited opportunities for crowd management and anticipation as well as prevention of security situations. Keyword: tracking and predictive security. Highlights are:

- Discussion panel “Video Technology and AI: Towards Predictive Security?” with, among others, Jochen Sauer, Axis Communications.
- Expert presentations by Alexander Harlass, Azena and Eagle Eye Networks, among others.

Wednesday, October 5, 2022: Access control / Alarm Systems / Call Systems

Biometrics as a form of authentication, methods of Building Information Modeling (BIM) and new concepts for remote services of alarm systems are Wednesday's highlights:

- Panel discussion “Biometrics in buildings: what is possible, what makes sense?”
- Technical presentations by Martin Bemba, Managing Director of the ABUS Security Center, as well as speakers from Assa Abloy, TAS and others.

Thursday, October 6, 2022:

Fire Protection

Fire protection concepts are mandatory: They save lives, increase safety and can reduce construction, operating and insurance costs. For building owners and planners, this means familiarizing themselves with a complex, specialist topic. The latest technological and regulatory developments in the field of fire protection will be the focus on Thursday:

- Panel discussion “Fire protection in the context of building renovation”.
- Technical presentations by speakers from Bosch Sicherheitssysteme, Ei Electronics, Lupus Electronics, Siemens, among others.



Intersec Forum starts on the second day of the show in the Intersec Building area in Hall 8.0

Smart City: More Security Through Networked Light

Another aspect that links Light + Building with the topic of safety is innovative lighting concepts. They can make a decisive contribution to safety in both urban and rural areas. After all, illuminated streets and squares ensure that pedestrians or cyclists have good visibility and – just as important – are seen by others. Of course, road traffic also requires illumination tailored to the local situation and the respective traffic volume to enable drivers to arrive safely after dark.

These innovations also include those products and concepts that advance the development of lighting technology for smart cities: The idea of the smart city is based on integrated technology systems that make a city safer through extensive digitization and networking of lighting systems by means of individually remote-controllable lighting scenarios. And they do so in a way that is tailored to the local situation and

time of day. In addition to street lighting – with high visual comfort – this also includes non-invasive video surveillance, for example in parks, pedestrian zones and parking lots.

The integration of video surveillance systems in modular, smart light pedestals is simple in form – and provides the outdoor luminaires with a valuable, security-relevant additional benefit. Brightness and light temperatures can be controlled depending on the time of day and season, so that in combination with LEDs they provide good illumination.

Invitation for Intersec GIT Together

On Wednesday, October 5, starting at 4:00 p.m., the trade fair organizers and GIT

SECURITY invite you to a networking event under the motto “GIT Together”. The event serves the informal exchange of security professionals and interested parties and will take place in the area of the Intersec Forum in Hall 8. Food & drinks will be served and GIT SECURITY will provide interested parties (subject to availability) with free tickets for the trade fair and the event: Just send an e-mail with the keyword “Intersec GIT Together” to GIT-GS@Wiley.com.

**Wiley and GIT SECURITY
at Intersec Building Frankfurt:
Hall 8.0, Booth J75**

CONTACT

Messe Frankfurt Exhibition
www.light-building.com
www.Intersec-Building.com
www.intersec-forum.com

COVER
STORY

SMART ACCESS

Homelok

Salto Launches All-in-One Smart Access
Solution for Residential Living

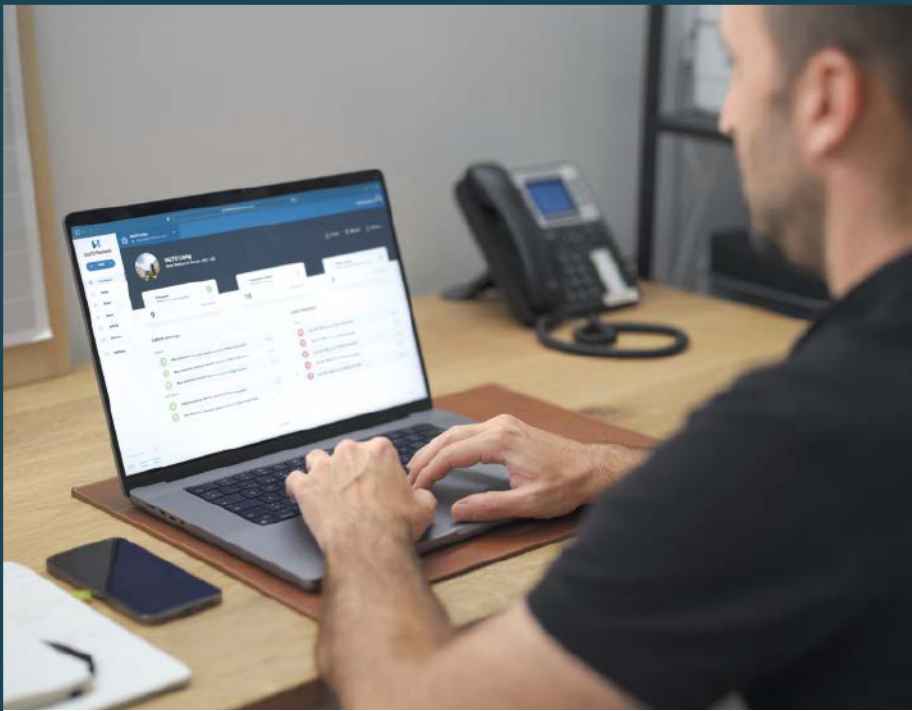
Salto Systems is launching a ground-breaking new platform aimed at the residential market. Salto Homelok is set to revolutionize residential living with its all-in-one solution that integrates smart access control technology, hardware, cloud software, digital keys, a smart living ecosystem, and global service support.

“Smart home living is becoming increasingly more popular,” says Iñigo Unanue – Global Residential Lead, at Salto Systems. “Residents want seamless access, without managing multiple keys – and property managers want a solution that is easy to manage and provides seamless resident onboarding. All want physical security and protection for assets as well as a smarter living experience. Homelok, Salto’s residential solution, delivers all this and more, providing convenient, secure, and technology-enabled living.”

Salto Homelok will provide smart access control solutions across the residential

market, from multi-family to single-family housing, vacation rentals, and home care/assisted living establishments. Salto Systems’s electronic locking solution is modern and easy to install and maintain, without the cost and complexity of traditional access control solutions.

Salto Systems brings a wealth of smart building expertise, ground-breaking innovation, a unique combination of flexibility and control, and a market-leading portfolio to its residential solution, with a specific focus on the following five value propositions:



Salto Homelok user-centered, cloud-based management software gives property managers ultimate control and blends seamlessly with building operations

”
We are very excited to launch Salto Homelok to the residential and to multifamily market. The platform is set to revolutionize the way we live, access to home and go about our everyday lives, and, while security has always been a concern, data protection, privacy and secure home access are vital, now, more than ever. Homelok is the solution.

Aznar Sethna, CSMO of Salto Systems

“

■ **Guaranteed safety, privacy, and security**
 Homelok gives the reassurance of robust 24/7 security and unmatched data protection and privacy, using a unique combination of cloud-based and smart stand-alone access technology to create a market-defining level of safeguarding.

Specifically Designed for Residential Living

Salto has developed advanced and aesthetically designed residential-specific electronic access control solutions that set a new standard in the industry – from building and perimeter access, common area organization, to unit door management – with one easy-to-use system for residential properties of all types and sizes.

All-in-One Solution for Residents and Property Managers

From the numerous smart access electronic locking solutions (hardware products) to the user-centered cloudbased software accessible via web and mobile applications to an industry-leading digital keyless experience in the form of the Homelok App, Apple Wallet, and physical smart keycard, Salto provides the ultimate all-in-one smart access experience for residents and property managers.

Enhance the Smart Living Experience by Adding Your Resident Key to Apple Wallet

Through Salto's Homelok platform, users will now be able to add their resident keys to Apple Wallet, allowing residents to unlock Salto smart locks with a simple tap of an iPhone or Apple Watch.

An advanced residential electronic locking solution for all access needs whether it's building access and common area organization, or unit door management — all with one easy-to-use system.

■ **Operational efficiency**

Homelok uses digital access technology, rather than mechanical keys and can be accessed from anywhere, allowing property management activities to be streamlined and carried out more efficiently.

■ **An elevated experience**

Homelok delivers the smart living experience by providing a convenient and digital experience for residents, enabling seamless keyless access and management capabilities for their day-to-day living.

■ **Future-proof SVN access-driven technology in the cloud**

Homelok utilizes cutting-edge, innovative, and reliable Salto SVN data-on-card technology from a high-value, versatile, and globally compatible product range that will continue to evolve into the future to support any developing access control requirements.

■ **Enabling the Smart Living Ecosystem**

Homelok is the core smart access solution within the Smart Building Ecosystem, by working with world-class Technology Partners and Property Management Systems (PMS). It is an open platform that can be fully integrated to meet the growing demands for connected home living as well as enable greater control and visibility across property management systems.

CONTACT

Salto Systems

www.saltosystems.com



ACCESS

Selective Lockdown

In an Emergency, Could You Lock Down Access to Your Entire Premises Quickly and Safely?

Situations can arise when a facility manager needs to lock down their premises remotely. With mechanical security this is, of course, impossible. Likewise, many existing wireless electronic access control systems do not have the ability to lock down efficiently – or even at all.

The Smartair wireless online access control system from Assa Abloy allows facility managers not only to lock down from anywhere, they can do so intelligently by opening, closing or maintaining access to individual doors or zones as appropriate to deal with the emergency. With a single, global command, doors equipped with Smartair devices may be set to Block Mode. They only unlock with a specific credential so that, aside from designated staff, no one on-site can move around freely.

Alternatively, Emergency Close can lock all openings remotely and simultaneously while an authorized credential may still unlock them. As a third option, every device can be set to Emergency Open, which unlocks them all. This could provide fire services with instant access to a whole building or site, for example.

Fine-Grained Lockdown Controls

Smartair gives facility managers different ways to lock down. Global Lockdown may

be initiated from the system's software interface or Web Manager, but can also be activated via an emergency push-button connected to a system hub. In addition, lockdown does not need to be an all-or-nothing choice because the system enables fine-grained control down to the level of an individual door, if required. A facility manager can pre-define over 250 different lockdown zones. In an emergency, they choose whether to lock down a whole zone or just specific doors. This level of control could protect people and valuable assets – or in extreme situations, even save lives. With the control provided by this feature, managers can be confident that building users have the highest level of protection against the unexpected.

Multiple Credentials

With intuitive management software and battery-powered locks for almost any application, a Smartair system is easy to install and convenient to use. It can handle a large number of users and offers a choice of cre-

entials, including standard RFID cards, tags and fobs along with mobile keys via the manufacturer's Openow app. The system is more cost-efficient to run than wired access control, which needs mains electricity, or traditional mechanical security where locks must be managed manually and individually. Doors only require minimal alterations when SMARTair devices are fitted because no cabling is required.

With the broad range of system devices – escutcheons, cylinders, locks and a wall reader – plus flexible control from the corresponding software, facility managers can run their site efficiently and safely, even in an emergency. Assa Abloy offer a free Solution Guide, downloadable from their website.

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GIT System Test Video Analytics

An Independent Test of Video Systems for Perimeter Detection

Dear Reader,

Which e-bike is best for climbing your local mountain, which lawn mower wins the duel for the richest green, which guitar amplifier has the crispest sound? Tests and rankings of products are usually found in popular domestic product magazines. For truly professional security products and systems, however, comparative data of this kind has not been available to date. Wiley and GIT SECURITY are now changing that.

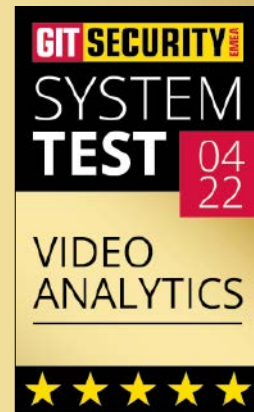
Together with the expert office of Markus Piendl and the system house i-Alarmsysteme, the first „GIT System Test Video Analytics“ (GSTVA) was carried out in Q2 of 2022 - and eleven powerful, currently available systems were subjected to intensive test scenarios.

In this special article, you can read all about the background of the „GSTVA“. You will learn how the tests were conducted and which providers achieved which results. Many thousands of data sets and analyses had to be sifted and sorted - after dozens of scenarios had been applied several times. The results in this special article are intended to provide you as a planner, operator, insurer, installer, or decision-maker for safety-relevant investments with the best possible basis to determine which systems are particularly well suited to your requirements.

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

We wish you insightful reading!

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



Introduction

Property perimeter protection is essential to secure buildings and critical infrastructure. In doing so, video analytics can significantly improve security in such environments while reducing costs. Security personnel and operators want to be alerted immediately when suspicious events are detected, but not distracted by false alarms. Regardless of the technology used, there is only one way to determine if a system provides the protection needed: a comprehensive test in a real-world environment conducted by experienced professionals.

While there are numerous tests and reviews available for a variety of consumer products, there is not a lavish amount of data available for professional security products and systems. When it comes to selecting security products and systems for projects, end users, security installers and system integrators very often have to rely on their past experiences with certain vendors, recommendations from others or simply information provided by vendors. User stories and articles about installations are a valuable tool for gathering information and can influence a purchasing decision - but they have their limitations. Therefore, Wiley and GIT SECURITY have often been asked to provide even more detailed background information about systems - and, in the best case, to subject products and systems to real tests that can only be performed by a neutral authority like GIT SECURITY from the Wiley publishing house.

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

As an experienced and independent authority, the expert office of Markus Piendl (SMP) was the ideal partner for the coordination of the tests. SMP has already worked on more than 1,900 perimeter protection projects for end users, insurance companies or system integrators.

Markus Piendl from SMP in Munich is known as an expert in security technology, prevention and perimeter protection. He is a recognized specialist both in Germany and abroad for expert opinions in the security industry and a manufacturer-independent expert with proven experience. Also with great experience and involved in the tests was Ing. Hannes Dopler, MSc from Bad Sauerbrunn near Vienna in Austria. He also manages international projects and is a court-certified and sworn expert with extensive experience in defense and security projects.

Wiley and SMP also worked on the tests together with i-Alarmsysteme as the technical service provider. They acted as the on-site security installer, were responsible for all logistics and installation, and provided the personnel for alarm evaluation.

After the test concept was completed, the most capable providers of video analysis systems for perimeter protection were invited to participate. Avigilon, Axis, Bosch (two systems), Dahua, Dallmeier, Hikvision (two systems), Honeywell, Mobotix and Saimos/Vivotek/Milestone (one common system) accepted the challenge for the first test series.



(l - r) i-Alarmsysteme managing director Peter Zehetner, marketing manager Kathrin Karner and the two technical managers Gert Hammer and Luciano Terziu



The experts Hannes Dopler (l) and Markus Piendl (r)

The Installation Environment and Technology on Site

Mr. Dopler, you presented two test sites just a few days after our initial inquiry. Why did you decide on these locations?

Hannes Dopler: First of all, proximity to a European capital was important to us for logistical reasons. For practical reasons, we wanted to ensure that a reliable, competent technical service provider was located in the immediate vicinity.

Mr. Zehetner, you are the managing director of i-Alarmsysteme GmbH. What did you think when Mr. Dopler and Mr. Piendl asked you to be available as a technical service provider for our test?

Peter Zehetner: I have been in the security industry for more than 30 years. The approach of a comparative test with equal conditions for each manufacturer appealed to me very much for various reasons. Vendors that we already know very well have the opportunity to demonstrate their capabilities. Vendors we haven't worked with before can show where their strengths lie. There is no better training and development opportunity for my technicians, but also for the sales department. I agreed immediately and got my team motivated for the joint test.

Mrs. Karner, at i-Alarmsysteme you were responsible for communication and coordination, among other things. What challenges did you face and how did you overcome them?

Kathrin Karner: I received inquiries from all parts of the world. Some manufacturers asked us to set up their cameras and digital image storage for them because the Corona virus restricted access. Other manufacturers came to us themselves to prepare their systems; it was a matter of coordination. Packages from manufacturers arrived almost daily. Their contents

had to be reviewed, setup was coordinated by me, and we held online conferences to resolve technical issues. Communication and coordination with the vendors, my colleagues in the technical department, Wiley, and the two experts from SMP were my priority. My top priority was to ensure that the hardware was installed at the test site as quickly as possible and that no request, no matter how small or large, about any issue, went unanswered. A time consuming, challenging and stressful task – especially in the last few days before the various systems were disconnected from the internet to be checked for unwanted and false alarms.

Mr. Hammer, you and your colleague Luciano Terziu provided the extensive technical infrastructure for our test in record time. How complex was that?

Gert Hammer: We had to deal with eleven different systems, all of which functioned differently. We only knew some of the manufacturers. Video analysis for the perimeter is a special topic for which we as technicians needed time to familiarize ourselves. The fact that the manufacturers helped with online training, and configurations over the internet or on-site was a big advantage. I rarely had the opportunity to learn so much in such a short time.

Luciano Terziu: For me it was important to keep to the tightly planned schedule and offer all vendors the same starting conditions. A container with enough space for eleven workstations had to be procured, extensive cabling, a power supply and a dedicated network had to be set up, lightning and surge protection was installed, a temporary mechanical fencing system was erected, powerful infrared floodlights came from the UK and were installed. All this happened alongside our demanding day-to-day business and was only possible through a team effort.

The Organizers

from Wiley | GIT SECURITY



Dr. Heiko Baumgartner



Steffen Ebert



Miryam Reubold

The Test

The Task

The manufacturers of video analytics for perimeter protection were asked to secure a precisely defined test area. The video systems were mounted on a fixed container and the area in front of it was to be secured against the intrusion of people 20 meters from the installation up to a maximum distance of 120 meters. The order to the manufacturers was to install their systems in cooperation with i-Alarmsysteme, commissioning, configuring and parameter setting their system in order to pass the tests successfully. The tests consisted of the re-enactment of 85 differently performed scenarios, a selection from several hundred more that had been prepared.

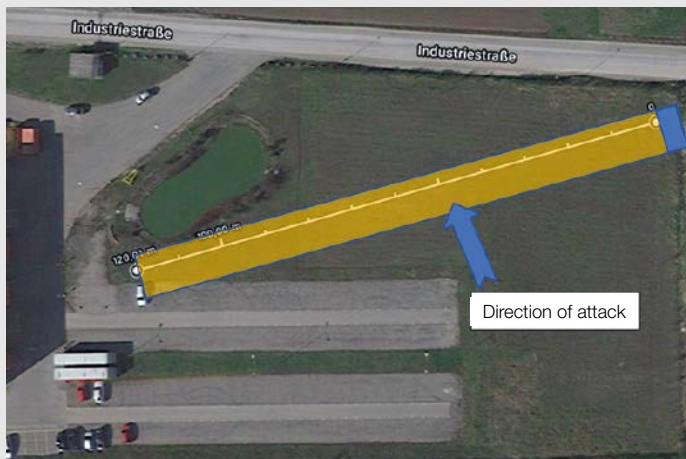
These scenarios are based on well-known and certified test procedures of national as well as international organizations. We recreated real perpetrator actions that were known to the security authorities and the test team from around 1,900 projects in Germany and abroad in these scenarios, according to the motto "Real life examples for real life scenarios". The systems were evaluated from the perspective of an employee in an emergency service control center.

The manufacturers were left to decide how to configure their system - and whether they wanted to perform the video analysis with one or two day/night cameras and/or a thermal camera. If a manufacturer wanted to use thermal cameras exclusively or day/night cameras exclusively, that was allowed. Cameras and/or lenses intended exclusively for police/military services and not available for civilian purchase were not allowed.

The Test Site

The test site was located in Weikersdorf am Steinfeld in Lower Austria. The focus of the tests was to secure the test site within an area starting 20 meters from the installation up to a maximum distance of 120 meters. There were three different virtual distance ranges at the test site to perform the test scenarios. These were designated Alpha 30–50m, Bravo 51–80m and Charlie 81–120m.

All technology was housed in an air-conditioned control station container with a central power supply. The control station container was equipped with a sufficiently fast and dedicated internet connection.



Overlook test site

Infrared lighting was used on site: two Raytec IR illuminators of type VAR2-IPPOE-HY8-1 and VAR2-IPPOE-i6-1. The VAR2-IPPOE-HY8-1 is a hybrid illuminator that can switch to white light in case of alarm, with an IR range of 290m and a white light range of 144m. The VAR2-IPPOE-i6-1 was ideal for illuminating our test site, with a 120m IR range and a beam spread of 35°x10°. We will discuss aspects of illumination in perimeter protection in a separate article the next issue of GIT SECURITY.

All manufacturers indicated in advance the lower limit range of the required infrared illumination. In the course of commissioning the systems, we tried to find the optimum illumination.

Test Execution and Test Scenarios

In the control station, a 'control station employee' provided by i-Alarm-systeme documented the results of the test scenarios for each manufacturer, i.e. recorded whether an alarm was indicated or not. The leader of the evaluation team was also in the control station.

The test scenarios were based on known test requirements, test procedures and guidelines. They were altered and modified, or various disruptive criteria were added, where Wiley, i-Alarmsysteme and SMP felt that test points or requirements of various guidelines were out of date or not considered reasonable in the real world.

The real-world test criteria and scenarios cover the range of different offender groups that could target critical infrastructure as well as system-relevant areas of land or high-security installations.

The scenarios were divided evenly among the different ranges (Alpha, Bravo, and Charlie). Potential interference sources were deployed at different distances. Each test scenario was run three times and was considered to have been passed overall if at least two out of three runs resulted in an alert.



The test site at night

Test Blocks

The intrusion tests were divided into different scenarios and scenario groups. Variations were made between different types of movement, i.e. approaches were made at different speeds, angles and rhythms. Different types of clothing and camouflage were used in further variations, which were evaluated separately, and both day and night tests were conducted. Some test scenarios involved destabilizing the video analysis systems through the use of pyrotechnics, for example.

The aim was to test how the systems react to different environmental conditions and whether this could be exploited by perpetrators, such as by:

- animals (birds, dogs and cats of different sizes)
- simulation of other animal species
- garbage (packaging material from fast food restaurants, construction sites, other types of garbage)
- the effects of weather conditions
- other simulations

At this point it is important to mention that the test scenarios were not conducted in an air-conditioned, clean or even sterile hall and the different weather conditions (heavy rain and temperatures around 10 degrees celsius on the first test day, sun and temperatures between 15 and 25 degrees celsius on further test days) had an influence on the tests but were the same for all systems. This increased the reality effect and made the results of the tests even more meaningful than tests under laboratory conditions.



Do the systems recognize this 'tree'? Hannes Dopler moves at a snail's pace through the perimeter



Experiments were conducted with different types of movements and approach, and at different speeds





Scenarios with jamming and camouflage attempts were tested during day and night

False Alarms (NAR/FAR)

Information on false alarms (NAR/FAR) was included in the reporting. This is intended to encourage manufacturers to carry out realistic parameterization and not to make settings for the video analysis systems that are too sensitive or out of line with actual practice. For this purpose, we observed the incoming alarms outside the three test days over a period of several weeks and evaluated the number of alarms in the 'quiet phase'.

Perpetrator Groups, Sabotage, Manipulation

Particular emphasis was placed on the deliberate sabotage of video analysis systems by well-trained perpetrators with experience in some test scenarios. In these sabotage attempts, various techniques were used to disrupt, manipulate, or irritate the systems to the point where the perimeter could be breached without an alarm being raised or fail to alert to a definite detection. A few scenarios also tested whether the systems recognize tampering without an intrusion attempt being made. The difference between this and the interference and environment criteria is the deliberate action to put the system out of operation. In designing the tests, we considered the following types of offender: spontaneous offenders, petty criminals, criminals with plans, professional criminals, and terrorists. However, we refrained from physically attacking the systems (e.g., by using force) and also did not carry out any hacker attacks. ●



Documenting the alarms in the control station container



Equal Conditions for All Systems

The Candidates and their Systems

Avigilon

Avigilon used a 640S-H4A-THC-BO12 thermal camera with 640x512 resolution in combination with the 5 MP model 5.0C-H5A-BO2-IR camera as sensors for testing. The Avigilon H4 Thermal camera with self-learning video analytics covers a wide area and uses thermal imaging technology with the goal of providing optimum results even in the most difficult conditions while minimizing false alarms. It detects any people or vehicles and their movements, even in poorly lit areas. The H5A camera (5.0C-H5A-BO2-IR) that was used has Avigilon's next-generation video analytics technology that is designed to draw attention to potentially critical events and form the basis for smarter and more powerful video security solutions.

Avigilon video analytics software is integrated into the cameras and operates object-oriented on the edge for people and/or vehicle detection. The advanced object detection promises more reliable detection of up to 50 objects in the scene and alerts users to important events. The Canadian manufacturer, which is part of Motorola Solutions, promises that its self-learning analytics will increase the effectiveness of security personnel. Designed from the ground up to manage HD video, Avigilon's analytics are integrated into their cameras with resolutions up to 8.5K (40 MP). This video pattern detection technology responds to the movements of people and vehicles, while movements that are not relevant to a scene are ignored. This system feature continuously learns to reduce the number of false positives to ensure that warnings are meaningful, time is not wasted, and efficiency is increased. ●



Axis

Axis Communications had also selected a combination of a thermal camera and a day/night camera for the tests. The thermal camera used was the Axis Q1952-E with a VGA resolution of 640x480. This provides a high-quality thermal image video stream around the clock, under all weather and lighting conditions, making it particularly suitable for perimeter protection and long-distance detection. The compact, rugged camera is built on a powerful analytics platform, so third-party analytics as well as the edge-based Axis Perimeter Defender intrusion detection software can be run directly on the camera. Axis Perimeter Defender version 3.1.0 was used in the system test. The software precisely defines the boundary line of a security area and helps due to the CPNI-certified calibration (former i-LIDS) and an additional and optional KI-based function to automatically detect and classify people and vehicles within the detection area.

In addition to the thermal camera with Axis Perimeter Defender, the Axis Q1656-BLE network security camera was tested including a lens that covered the whole distance area. This box camera has an impressive resolution of 4 MP at up to 60 frames per second. It is based on Axis' latest System-on-Chip (SoC), supporting edge-based deep learning analytics. The Axis Object Analytics application is pre-



stalled in the camera's firmware and also provides AI-based object analysis of the scene. This can be used to detect and classify people, vehicles and vehicle types, for example.

Axis Communications offers a free long-term support (LTS) program for firmware updates for both cameras. LTS provides important bug fixes, vulnerability patches as well as updates to camera functionality without affecting camera functionality. In this way, the products remain protected and up-to-date at all times. ●

Bosch

Bosch entered the GIT System Test Video Analytics with two independent systems that were tested separately:

Thermal Camera with Integrated Analytics

The first system was the Bosch Dinion IP 8000 (NHT-8001-F35VF) thermal camera with VGA resolution, running the object-oriented Bosch Intelligent Video Analytics (IVA) version 8.10 analysis software at the edge. The Dinion IP 8000 thermal camera promises excellent thermal performance as well as outstanding corrosion resistance. Bosch thermal cameras offer different resolutions: QVGA or VGA. At the highest resolution and maximum thermal performance level, the camera

provides excellent scene detail and makes it easier for users to interpret the information.

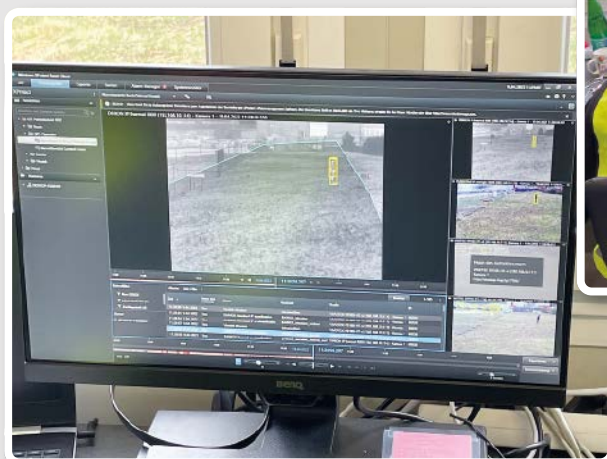
The Dinion IP thermal 8000 combines thermal imaging with intelligent video analytics installed as standard. The camera is said to be particularly suitable for mission-critical applications that require video content analysis over longer distances (up to 610 meters). Intelligent video analytics

were designed specifically for challenging environments and provides a state-of-the-art video analytics solution. The system is designed to differentiate between true security events and known false triggers, such as in challenging environments or applications that require analysis of video content over longer distances.

Optical Camera with Integrated Analysis

The second Bosch system tested consisted of the Bosch Flexidome IP 8000i (NDE-8513-RXT) 4MP camera with an integrated variofocal lens (12 to 40 mm) that also ran in the test with intelligent video analytics installed as standard, as described earlier with the thermal system. The Flexidome IP 8000i features motorized pan, tilt,

roll and zoom (PTRZ) to set the desired field of view without having to touch either the camera or lens, Starlight X technology with a 1/1.8" 4.1MP sensor for good performance in low-light conditions, and built-in intelligent video analytics with object detection to trigger alarms and quickly retrieve data with maximum reliability.



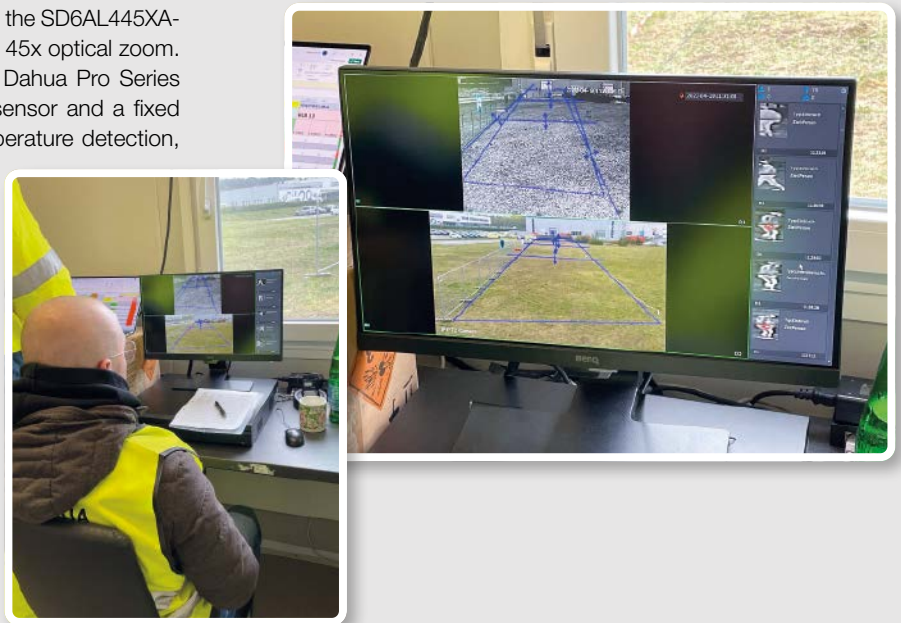
With IVA at the edge, i.e. directly in the camera, there is no single point of failure as with a server-side analytics solution. This also reduces the number of servers required and the power and cooling requirements in the data center. Furthermore, the metadata created in real time can be used not only for live alerting, but also for archive searches. This is of great benefit to both the end user, to search archives quickly and

specifically, and to the integrator, as fine-tuning of the video analysis can be performed with archive data, saving time.

In both camera systems, in addition to the tested IVA, a machine learning based 'camera trainer' can also be used, which allows the integrator to learn individual objects and situations. ●

Dahua

Dahua also chose a combination of two sensors for the test, the TPC-BF5601 thermal camera with 640x512 resolution and the SD6AL445XA-HNR network PTZ camera with 4MP resolution and 45x optical zoom. The TPC-BF5601-TB13 thermal camera from the Dahua Pro Series features an extra-sensitive and accurate thermal sensor and a fixed 13mm lens. It can be used for fire detection, temperature detection, alarm relaying, and human/vehicle classification. The WizMind series PTZ network camera is a professional H.265 network camera with a powerful 45x optical zoom and a 4-megapixel sensor. By using SMD Plus technology, the camera is able to recognize people and vehicles and has a filter for false alarms. The system was parameterized with the embedded firmware, i.e. the built-in firmware on the camera. ●

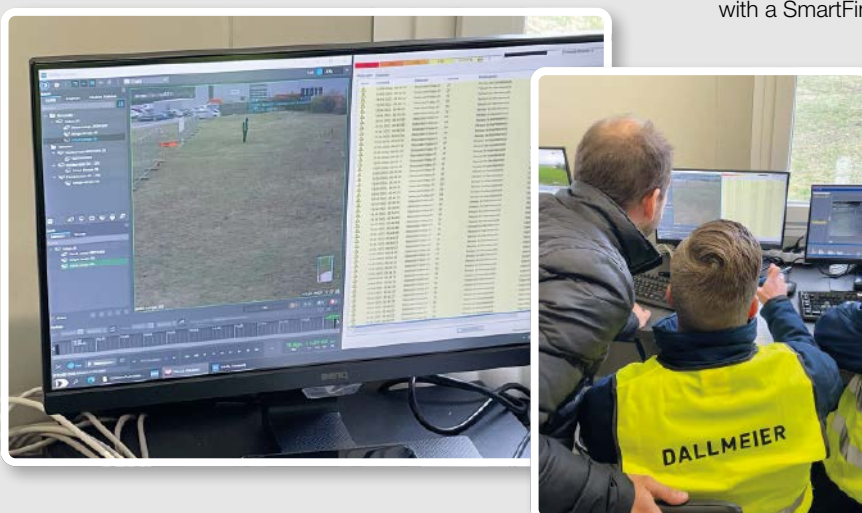


Dallmeier

For the GIT System Test Video Analytics, Dallmeier relied on its patented Panomera multifocal sensor technology, which is known for its comprehensive video coverage of wide-ranging areas. The Panomera S8 Ultraline series used in the test offers a particularly high effective resolution of up to 190 megapixels at 30 fps. Eight sensors with different focal lengths in one camera system make it possible to capture long distances or large areas in the highest resolution quality and with a minimum dead angle.

The analysis is made both pixel and object-oriented, both at the edge (on the camera) and on the server. The IPS 10 000 MK2 appliance used in the test combines the SeMSy Recording Server recording software with reliable, high-performance server hardware. The appliance is equipped with a database for the analysis results of Dallmeier network cameras and Panomera systems with edge analytics technology. The received events, objects and classes are stored with the relevant metadata in near real-time. For targeted search and evaluation, the VMS SeMSy Compact with a SmartFinder function is available.

Dallmeier's AI-based object classification reduces the number of false alarms at the perimeter to almost zero. At the same time, the manufacturer's Panomera technology enables significant cost savings because users require significantly fewer systems, installation points and infrastructure (masts, cables, network, etc.) compared to conventional camera technology. ●



Hikvision

Hikvision also took part in the GIT System Test Video Analytics with two independent systems that were tested separately: a thermal imaging solution and a video solution.

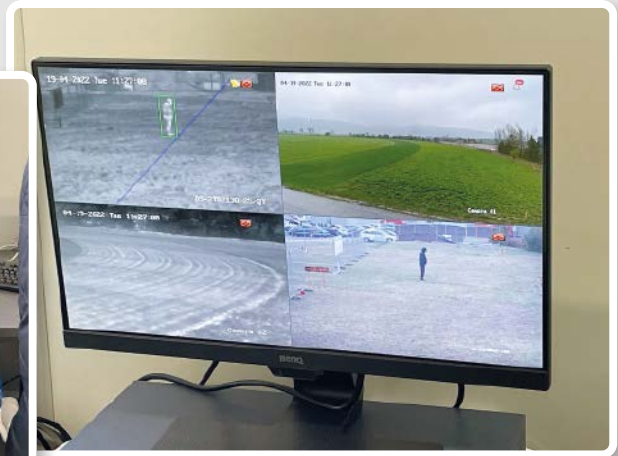
Hikvision Thermal Imaging Solution

The first system included the Hikvision DS-2TD2138-25/QY thermal imaging camera with a resolution of 384 x 288. The thermal imaging network camera with a built-in GPU supports intelligent, camera-based video content analysis (VCA) and can provide real-time alerting, for example, when detecting people or vehicles. It is used for perimeter surveillance and early fire detection, also for critical infrastructure. The pre-alarm system helps with immediate detection of unexpected events. This camera was deployed with firmware version V5.5.48, build 220126, and the DS-7716NI-I4/16P(B) network video recorder that was used for storage was deployed with firmware version V4.60.005, build 220108.

Hikvision Video Solution

The second Hikvision system tested used a DS-2CD7A86G0-IZHS 4K camera with an 8-32 mm lens. The Deepin-View series camera delivers high-quality

images in low-light conditions and in strong backlight due to its Dark-fighter technology and 120 dB true WDR technology. The waterproof, dustproof (IP67), and vandal-resistant (IK10) camera has intelligent video analytics features such as face detection, hard hat detection, multiple target detection and queue management. This camera was used with firmware version V5.5.804, build 210831, and the DS-7716NI-I4/16P(B) network video recorder used for storage was equipped with firmware version V4.60.005, build 220108. ●



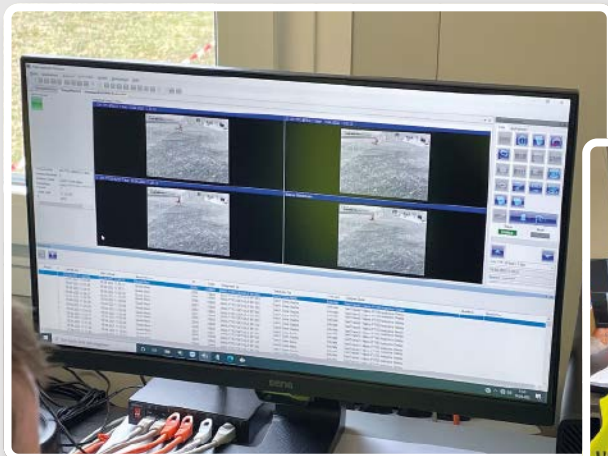
Honeywell

For the test, the Adpro iFT-E was used with the video analysis software IntrusionTrace. Honeywell's proprietary development is a pixel-based high-performance intrusion detection analytics software specifically designed for outdoor environments. Continuously enhanced, this analytics software covers a wide range of scenarios with varying environmental and ambient conditions, making it suitable for a broad range of outdoor security applications. IntrusionTrace promises an extremely low false

alarm rate combined with high detection reliability. Easy to parameterize and set up, it is said to save the installer valuable time in setting up the system.

When the Adpro-NVR iFT-E is armed, it is possible to remotely connect to a remote emergency and service control center (AES/NSL). All settings can be made by the installer or control center operator via remote parameterization. The system is characterized by its modular design and offers – by simply adding licenses for camera expansion and video analysis – the highest possible investment security for the user.

On the camera side, Honeywell opted for a combination of a thermal and a day/night camera. A Honeywell 5MP bullet camera of the 60 series type HC60WB5R2 was used. The camera's NDAA compliance is worthy of mention, as it also meets the highest cyber security requirements. The 60-series cameras are particularly suitable for enterprise solutions and critical infrastructure. It offers a wide dynamic range (WDR) of up to 120 dB and excellent sensitivity in low-light conditions (0.04 lux in color mode). The second camera used was a 13mm thermal camera type DH-TPC-BF5421 with a resolution of 400 x 300 pixels. ●



Milestone/Saimos/Vivotek

For GSTVA, a combined system consisting of Vivotek hardware, Milestone's XProtect video management system and Saimos analytics was brought in.

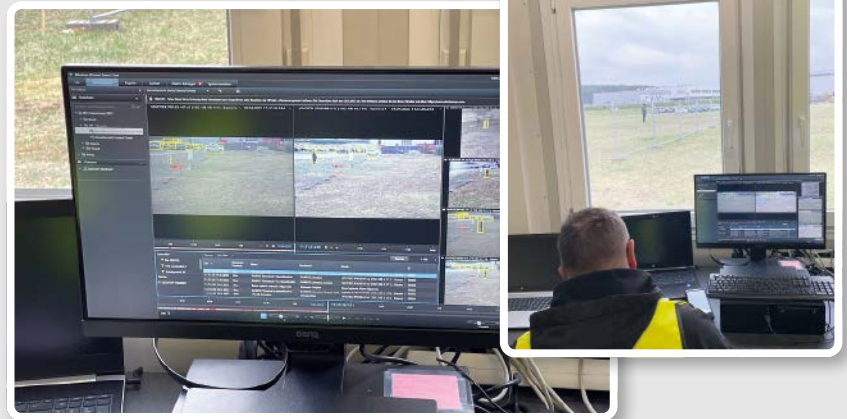
The Vivotek video sensors were a TB9330-E thermal camera with a resolution of 384x256, a Vivotek SD9368-EHL 2MP PTZ camera, and an IP9165-HT-V2 2MP box camera. The Vivotek TB9330-E is an H.265 outdoor bullet network camera that detects people and vehicles in bad weather, under difficult lighting conditions and other situations where visibility is poor. The new Vivotek SD9368-EHL is an IR speed dome PTZ camera with a resolution of 2MP at 60fps, recommended by the manufacturer for video surveillance in wide-area environments such as airports, urban surveillance and manufacturing facilities. The IP9165-HT is an H.265 box network camera that offers premium image quality at 1080p resolution and 60 fps, and thanks to SNV II, WDR Pro II and Smart Stream III technology, delivers clear images in both low-light and high-contrast environments.

For the GIT System Test video analytics, the Vivotek cameras were integrated with Milestone XProtect video management software. The analysis of the video data was aided by Saimos' video analytics, seamlessly integrated in Milestone XProtect. Saimos is found in the Milestone Management Client and Smart Client, allowing users to perform all configurations within the Milestone environment rather than switching back and forth between applications. The Saimos video analysis uses Deep Learning algorithms which are optimized for Intel CPU's thanks to Intel's OpenVINO and is therefore fully scalable – from enterprise systems including virtualized environments to small installations and cameras already configured within XProtect.

Saimos, Vivotek and Milestone had originally installed the integration of a LiDAR sensor, as used in modern projects, for the scenarios performed in the test. In the test however, Saimos video analysis (perimeter) and Saimos LiDAR (advanced) in version 2022 R1 / 1.4.1 were used, whereby the sensor fusion approach with Saimos LiDAR was not tested by us. The analysis was done on the server side and was purely Intel CPU-based – Saimos does not require expensive GPU's.

Saimos offers video analysis solutions that integrate LiDAR as an additional sensor technology as well as geo-information systems into Milestone XProtect.

In order to better compare the systems in the GIT system test video analytics, this option was omitted in the current test. ●



Mobotix

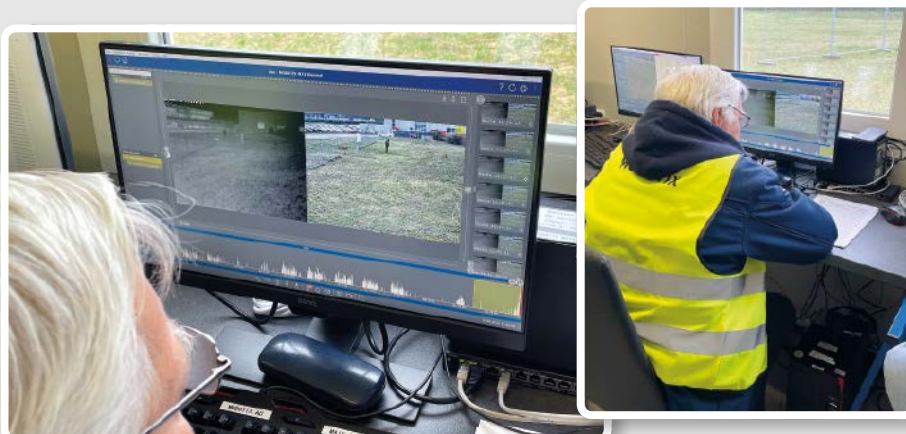
In the GIT System Test Video Analytics, the modular M73 camera from Mobotix, which can be used with one or two individually selectable image sensors, was tested in the combination M73TB-8DN150/640R150, i.e. equipped with a 4K video sensor and a 50 mK thermal sensor module. The high-performance 8 MP (4K) optical sensor module offers automatic day/night switching (IR cut filter) and has a wide dynamic range of 120 dB. Thanks to the high pixel count of the additional VGA thermal module, more details should be detected and even larger areas can be secured with perimeter protection.

The M73 with a total of over 40 different video sensor modules (4K day/night or 4MP ultra low light, tele to hemispheric and thermal with/without

thermal radiometry technology) is part of the Mobotix 7 platform. In addition to camera-integrated intelligent applications in video analytics such as object counting, heat mapping and behavior detection, the system is open for apps individually developed by Mobotix partners and external providers (e.g. for license plate recognition or AI-based behavior detection), which can also be directly integrated into the camera software and operated server-independently.

The video analysis in the test was provided by the ActivitySensor version 2.1 developed by Mobotix, which relies on pixel-based analysis 'at the edge', i.e. directly on the camera. The video motion sensor integrated in the camera filters between alarm-relevant and irrelevant events, and significantly reduces the number of possible false

alarms. The motion analysis detects moving objects and should not trigger an alarm in the event of disruptive events such as rain, snowfall or moving trees or poles. Mobotix ActivitySensor is also said to reduce false alarms caused by birds or small wild animals, for example, with conventional motion detection thanks to intelligent 3D motion detection. The aim is for the camera to always keep an eye on what is important and only sound an alarm when security-relevant events occur. ●



Test Results

False Alarms and False Alarms: NAR/FAR Evaluation

For this purpose, we observed the incoming alarms outside the three test days over several weeks and evaluated the number of alarms in the 'idle phase'. This was known to the manufacturers in advance and was intended to prompt them to carry out a realistic parameterization and not to make any settings for the video analysis systems that were too sensitive or out of line with actual practice. In practice, all manufacturers made realistic settings for their systems, which resulted in an acceptable false alarm rate. A detailed assessment of the NAR/FAR evaluation in the sense of an assessment of NAR/FAR per 100 m fence and day has not been made, but a qualitative assessment by the experts based on the recordings in the idle phase has been made.

Operation

The assessment of the operation of the systems and their user-friendliness is based on feedback from the experienced i-Alarmssysteme technicians who gave us feedback on the installation, assembly, configuration and configuration of the systems. In addition, we asked the employees in the control center who were responsible for the respective system some typical questions asked by security installers: "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 85 scenarios (a selection from several hundred prepared scenarios) were run on three test days during day and night, most of them with three runs. In the evaluation you can see the scenarios summarized into different blocks:

- **Day/night evaluation**
- **Distance range evaluation:** The distance category shows how the different distances affect the detection rate of the different scenarios.
- **Clothing:** The influence of the different types of clothing on the detection of the movement types is evaluated. The use of camouflage is also examined in this category. The extent to which specialized camouflage or camouflage devices have an impact 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.
- **Overall evaluation:** We have not made an overall evaluation of the systems, but indicated the overall detection rate for all scenarios. Many different criteria play a role in deciding on a system and it is appreciated that the criteria we tested and described are only a part of them. A system must always be individually adapted to the respective overall requirement and conditions.

Since the GIT System Test Video Analytics is not intended to provide 'advanced training for perpetrators' here, we have refrained from revealing and describing the types of clothing, types of movement, the means

The ratings for FAR/NAR Evaluation and Operation:

Excellent
Highly recommended
Recommended
Conditionally recommended
Not recommended

In the table, the percentage number indicates the ratio of the test scenarios evaluated as positive out of all scenarios performed in this category. The evaluation follows the same color code as the FAR/NAR and operation evaluation.

of camouflage and methods of deception or sabotage in the following summary. The participating manufacturers, on the other hand, were informed in detail about these descriptions and individual scenarios in the follow-up to provide a basis for the further improvement of their products.

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

The testers are aware that an evaluation rating will always provide material for discussion. The rating given is clear and easy to understand for the different target groups of decision makers. It is expected that decision-makers and customers usually decide on the basis of the sum of relevant criteria rather than exclusively on the basis of a single value or criterion. ●



Avigilon

The combination of an Avigilon thermal camera and an RGB camera that we tested was among the best of the test candidates. The system performed very well at fast and normal approaches, as well as with all types of clothing and during day and night. Minor weaknesses in a hard-to-detect type of movement with good camouflage can possibly be remedied with a more sensitive setting. The setting used for the test resulted in pleasingly few false alarms. The sabotage detection is very good and was explicitly praised by the operator, as it is very easy to see and occurs early on. The user interface is extremely user-friendly, and setup is very quick.

Conclusion: A well-balanced favorite

Avigilon	
FAR/NAR Evaluation	Excellent
Operation	Excellent
Daytime performance	81%
Nighttime performance	87%
Close range (Alpha)	91%
Medium range (Bravo)	77%
Distant range (Charlie)	77%
Apparel 1 (Streetwear)	89%
Apparel 2 (Camouflage & Ghillie)	77%
Sabotage	82%
Movement type 1 (walking upright)	95%
Movement type 2 (kneeing, lying or rolling)	52%
Overall percentage of passed scenarios	82%

Axis

Axis also chose a combination of a thermal camera and a day/night camera for the test, which showed excellent detection results. In addition to good sabotage detection, the system consistently delivered very good results for all types of motion except one, with a fast and normal approach, and with all types of clothing. The combined results of the thermal camera and the RGB camera shows a very good performance during both the day and at night. The evaluation, installation and operation were highly praised, especially the evaluation of the alarms was very easy. When it comes to the number of false alarms, Axis comes out best.

Conclusion: All-rounder

Axis	
FAR/NAR Evaluation	Excellent
Operation	Excellent
Daytime performance	87%
Nighttime performance	87%
Close range (Alpha)	81%
Medium range (Bravo)	90%
Distant range (Charlie)	86%
Apparel 1 (Streetwear)	89%
Apparel 2 (Camouflage & Ghillie)	85%
Sabotage	82%
Movement type 1 (walking upright)	97%
Movement type 2 (kneeing, lying or rolling)	61%
Overall percentage of passed scenarios	86%

Bosch

Bosch competed with two independent systems that were tested separately and had to perform independently, which they did convincingly:

Bosch RGB

The Bosch optical camera with integrated analysis is among the leaders of the participants, which is exceptional without thermal support. It showed very good performance at a fast and normal approach in all types of clothing, day or night. Very good detection rates are shown again at a slow and low approach during the day and also at night even with difficult to detect movements. Sabotage and tamper detection by day cannot quite meet the camera's own otherwise very high standard, but it performs well by night. Setup is user-friendly and the operator noticed the very fast and reliable intruder detection.

Conclusion: Top option for RGB cameras

Bosch RGB	
FAR/NAR Evaluation	Highly recommended
Operation	Excellent
Daytime performance	92%
Nighttime performance	87%
Close range (Alpha)	94%
Medium range (Bravo)	90%
Distant range (Charlie)	82%
Apparel 1 (Streetwear)	96%
Apparel 2 (Camouflage & Ghillie)	97%
Sabotage	59%
Movement type 1 (walking upright)	90%
Movement type 2 (kneeing, lying or rolling)	91%
Overall percentage of passed scenarios	89%

Bosch Thermal	
FAR/NAR Evaluation	Recommended
Operation	Excellent
Daytime performance	96%
Nighttime performance	90%
Close range (Alpha)	91%
Medium range (Bravo)	97%
Distant range (Charlie)	95%
Apparel 1 (Streetwear)	100%
Apparel 2 (Camouflage & Ghillie)	97%
Sabotage	76%
Movement type 1 (walking upright)	95%
Movement type 2 (kneeing, lying or rolling)	96%
Overall percentage of passed scenarios	94%

Bosch Thermal

The Bosch thermal camera with integrated analysis delivered even better results than the optical camera and excelled at almost all distance ranges and motion types with acceptable NAR/FAR values. Only in some sabotage and special scenarios did it show typical thermal camera weaknesses. Setup is also user-friendly with this Bosch camera, and operators praised the very fast and clear detection. Anyone who is willing to go without the support of RGB cameras for visual clarity on a particular project can fully rely on this thermal camera for detection.

Conclusion: Benchmark for thermal cameras

Dahua	
FAR/NAR Evaluation	Highly recommended
Operation	Highly recommended
Daytime performance	100%
Nighttime performance	86%
Close range (Alpha)	91%
Medium range (Bravo)	100%
Distant range (Charlie)	95%
Apparel 1 (Streetwear)	100%
Apparel 2 (Camouflage & Ghillie)	95%
Sabotage	88%
Movement type 1 (walking upright)	98%
Movement type 2 (kneeing, lying or rolling)	91%
Overall percentage of passed scenarios	95%

Dahua

Dahua came with a combination of two sensors: a thermal camera and a network PTZ camera. Settings were made and detection carried out directly on the camera using the built-in firmware. The system used the respective strengths of a thermal camera and an RGB camera and showed some of the best results overall - with optimum performance during the day, but also strong performance during the night, and this for all types of movement and camouflage. There is still some room for improvement with a few sabotage attempts, but otherwise the user-friendly Dahua system left nothing to be desired.

Conclusion: A golden combination

Dallmeier	
FAR/NAR Evaluation	Excellent
Operation	Highly recommended
Daytime performance	91%
Nighttime performance	82%
Close range (Alpha)	91%
Medium range (Bravo)	93%
Distant range (Charlie)	90%
Apparel 1 (Streetwear)	96%
Apparel 2 (Camouflage & Ghillie)	85%
Sabotage	100%
Movement type 1 (walking upright)	91%
Movement type 2 (kneeing, lying or rolling)	91%
Overall percentage of passed scenarios	91%

Dallmeier

Dallmeier relied on the patented Dallmeier Panomera Multifocal sensor technology in the test, which builds on no less than eight video sensors in this system. The most expensive system in this test was easily capable of delivering a very good performance in the resolution of our test terrain at all distances and with all types of clothing and camouflage. The system can be very efficient in terms of price in projects due to the lower number of cameras required. The performance at night without thermal support can be rated particularly highly. No weakness was evident in the sabotage scenarios. Our operators praised the very good zoom function and true colors, but wished for a clearer display and labeling of alarm events. The latency of the screen display compared to what happens in real time takes some getting used to, but does not detract from the top performance.

Conclusion: Top model

Hikvision

Hikvision competed in the GIT System Test Video Analytics with two independent and separately evaluated systems: a thermal imaging solution and a video solution, which were very convincing, especially in terms of price/performance.

Hikvision RGB

By far the most cost-effective camera solution in the test, Hikvision delivers very high-quality video images during the day and at night. The video analysis works directly on the camera, as the analysis is integrated directly into the firmware. Installation of the interface for operators is very simple and intuitive, as is user setup and scenario setting. The performance of the system is sufficient for undemanding applications. As expected, performance at night without thermal support is worse than during the day, and in sabotage scenarios the system works only partially.

Conclusion: Solution for small budgets

Hikvision Thermal

The thermal camera solution tested from Hikvision ranks at the front of the candidates thanks to its equally good performance in all areas, day or night. The video analysis only shows slight weaknesses in difficult motion scenarios. The system offers good sabotage detection during day and night and acceptable NAR/FAR values. Like Hikvision's video solution, the interface installation is very simple and intuitive for operators. User setup and scenario setting is quickly completed.

Conclusion: Thermal price/performance winner

Honeywell

Honeywell's intrusion trace video analysis software analyzed signals from a thermal and a video camera in the test. It has been specially developed for continuous outdoor operation - and this is evident from the very good results. The detection is excellent at all tested distance ranges and also optimum at night. Only at long distances are there slightly better systems. Operators were pleased with the simple 'region of interest' configuration, which allowed the system to be adjusted quickly and intuitively. Sabotage attempts and approaches in camouflage clothing are no problem for the system. Setting up the system is very simple and intuitive, only the display could have a more modern touch.

Conclusion: Perimeter specialist

Hikvision	
FAR/NAR Evaluation	Highly recommended
Operation	Highly recommended
Daytime performance	57%
Nighttime performance	30%
Close range (Alpha)	56%
Medium range (Bravo)	53%
Distant range (Charlie)	23%
Apparel 1 (Streetwear)	54%
Apparel 2 (Camouflage & Ghillie)	54%
Sabotage	18%
Movement type 1 (walking upright)	58%
Movement type 2 (kneeing, lying or rolling)	17%
Overall percentage of passed scenarios	46%

Hikvision Thermal	
FAR/NAR Evaluation	Recommended
Operation	Highly recommended
Daytime performance	91%
Nighttime performance	70%
Close range (Alpha)	75%
Medium range (Bravo)	90%
Distant range (Charlie)	86%
Apparel 1 (Streetwear)	96%
Apparel 2 (Camouflage & Ghillie)	77%
Sabotage	76%
Movement type 1 (walking upright)	93%
Movement type 2 (kneeing, lying or rolling)	61%
Overall percentage of passed scenarios	83%

Honeywell	
FAR/NAR Evaluation	Recommended
Operation	Highly recommended
Daytime performance	94%
Nighttime performance	100%
Close range (Alpha)	100%
Medium range (Bravo)	97%
Distant range (Charlie)	90%
Apparel 1 (Streetwear)	96%
Apparel 2 (Camouflage & Ghillie)	95%
Sabotage	100%
Movement type 1 (walking upright)	95%
Movement type 2 (kneeing, lying or rolling)	100%
Overall percentage of passed scenarios	96%

Milestone/Saimos/Vivotek	
FAR/NAR Evaluation	Highly recommended
Operation	Excellent
Daytime performance	89%
Nighttime performance	83%
Close range (Alpha)	81%
Medium range (Bravo)	90%
Distant range (Charlie)	86%
Apparel 1 (Streetwear)	89%
Apparel 2 (Camouflage & Ghillie)	87%
Sabotage	76%
Movement type 1 (walking upright)	95%
Movement type 2 (kneeing, lying or rolling)	65%
Overall percentage of passed scenarios	86%

Milestone/Saimos/Vivotek

True teamwork was delivered by the combined system of Vivotek hardware, Milestone video management and Saimos analytics. The first result of the collaboration was a very simple and quick installation. Using the Milestone Management Client and Smart Client, all the configuration could be completed quickly and effectively within the Milestone environment. The system was up and running within a short time and was in the top group of the tested systems in terms of recognition. It performed very well at fast and normal approaches with all clothing types, very well at slow and low approaches, whether at day or night, with the exception of one difficult-to-detect type of movement.

Conclusion: High-performance networker

Robotix	
FAR/NAR Evaluation	Excellent
Operation	Excellent
Daytime performance	34%
Nighttime performance	57%
Close range (Alpha)	44%
Medium range (Bravo)	40%
Distant range (Charlie)	41%
Apparel 1 (Streetwear)	21%
Apparel 2 (Camouflage & Ghillie)	38%
Sabotage	82%
Movement type 1 (walking upright)	58%
Movement type 2 (kneeing, lying or rolling)	0%
Overall percentage of passed scenarios	42%

Robotix

Robotix's flexible and modular M73 camera was used during the test in a combination of a 4K video sensor and a thermal sensor module. The sensors provided a clear image of the scene during the day and at night. Installation of the operator interface was found to be very simple and intuitive. The alarm display and alarm documentation is very good and clear. The activity sensor used for video analysis works pixel-based directly in the camera, although it was not initially developed specifically for use in perimeter protection but rather for license plate recognition, gas station monitoring and the retail sector. It was a courageous step on the part of the manufacturer to send its system into the race without any additional auxiliary components, which deserves recognition. Therefore the detection had potential for improvement at all distances during the test and showed weaknesses especially when used during the day and with movement types that are difficult to detect. The sabotage detection, on the other hand, worked very well.

Conclusion: Convenient simple solution

Our Test Conclusion

Video-based systems can be a key element in perimeter protection

This is another finding that was proven with the tests: video-based systems can be used to monitor perimeters effectively and with limited financial investment. The tested systems show reasonable detection for standard requirements and a sterile perimeter and can be used in conjunction with other perimeter protection measures. The widely-held opinion that any video analytics can detect unconventional perpetrator patterns is not true. There are video analytics providers that, due to the intensive training of their algorithm e.g. through 3D models and testing by people, can successfully detect this perpetrator behavior and there are providers that cannot or do not want to be able to because their focus is in other areas.

Improvements are needed

While the resolution, image quality and low-light display of all the tested systems are now consistently at a very high level, there is definitely 'room for improvement' in video analytics, i.e. alerting in our case. As expected, the performance of some systems could be improved for complex camouflage and movement types. With better system tuning to local conditions and refined algorithms tuned to more challenging scenarios, performance can be improved. This should be noted because some of these systems are offered for critical infrastructure and the threat then comes not from opportunistic perpetrators but from individuals with some military training and a professional approach.

At least as important as the quality of the systems is professional installation

In addition to the quality of the video systems and software, on-site setup by an expert is critical and has a major impact on 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, a more extensive acceptance procedure with scenario testing and interference tests 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 what the most important aspects of the surveillance are. Even for high-sensitivity systems with sophisticated video analytics, the detection rate can be further increased by increasing sensitivity and turning off filters, if more false alarms are acceptable. In some of the systems tested (including for example Avigilon, Axis, Bosch), it is possible to subsequently change filters and thresholds after tests or a trial run have been performed - in the lab, so to speak - and see if there would have been an alarm if the settings had been changed. This possibility simplifies the adaptation of the system to the situation on site, especially if this has changed over time, e.g. due to changed requirements or too many false alarms.

More sensitive video analysis does not automatically produce more false alarms

The often-expressed opinion that video analytics systems produce exponentially/disproportionately many false and unwanted alarms when detecting unconventional offender patterns is not correct. Our test has shown that, depending on the vendor, this need not be the case: the number of unwanted alarms increases, depending on the system used but neither exponentially nor disproportionately. The number of unwanted and false alarms can also be reduced by taking care of the perimeter, such as by regularly cutting back vegetation, reinforcing the manual fencing system against wild animal intrusions, by collecting garbage, but also by consistently installing approved (firmware) updates.



	Avigilon	Axis	Bosch RGB	Bosch Thermal	Dahua
FAR/NAR Evaluation	Excellent	Excellent	Highly recommended	Recommended	Highly recommended
Operation	Excellent	Excellent	Excellent	Excellent	Highly recommended
Daytime performance	81%	87%	92%	96%	100%
Nighttime performance	87%	87%	87%	90%	86%
Close range (Alpha)	91%	81%	94%	91%	91%
Medium range (Bravo)	77%	90%	90%	97%	100%
Distant range (Charlie)	77%	86%	82%	95%	95%
Apparel 1 (Streetwear)	89%	89%	96%	100%	100%
Apparel 2 (Camouflage & Ghillie)	77%	85%	97%	97%	95%
Sabotage	82%	82%	59%	76%	88%
Movement type 1 (walking upright)	95%	97%	90%	95%	98%
Movement type 2 (kneeing, lying or rolling)	52%	61%	91%	96%	91%
Overall percentage of passed scenarios	82%	86%	89%	94%	95%

	Avigilon	Axis	Bosch RGB	Bosch Thermal	Dahua
Thermal Camera					
Camera Manufacturer	Avigilon	Axis		Bosch	Dahua
Camera Type/Name of Model	640S-H4A-THC-B024	Q1952-E 35 mm		NHT-8001-F35VF	Thermal camera/ TPC-BF5601
Resolution	640x512	640 x 480		VGA	640 x 512
Lens Data (Focal Length [mm]/Aperture [f])	18 mm	hfov: 35 mm / 17° F1.14		35 mm, Viewing angle: 17,6° x 13,2° (H x V);	25 mm
Overlap Area at Test Field	23 m	21 m – 120 m		18m	18 m
List Price of the Camera (net Euro)	€ 5,908	€ 6,499 MSRP		€ 8,900	€ 7,433
Camera Day/Night (RGB)					
Camera Manufacturer	Avigilon	Axis	Bosch		Dahua
Camera Type/Name of Model	5.0C-H5A-B02-IR	Q1656-BLE	NDE-8513-RXT		Speed dome/ DH-SD6AL445XA-HNR
Resolution [MP]	5 MP	4 MP	4 MP		4 MP
Lense Manufacturer		Axis / Computar	Bosch		
Lens Data (Focal Length [mm]/Aperture [f])	9 – 22 mm; F/1.6	iCS - 9 – 50 mm / F1.5	Camera integrated, Optical (12 to 40 mm lens), F-stop 2.3 – 2.3		3.95~177.7 mm
Overlap Area at Test Field	21 m	20 – 120 m	15 m		27 m
List Price of the Camera (net Euro)	€ 1,206	€ 1,599 incl. wall arm	€ 1,590		€ 2,996
List Price of the Lens (net Euro)		€ 449			
Video Analytics					
Manufacturer of Video Analytics	Avigilon	Axis	Bosch	Bosch	Dahua
Version	Avigilon VAL5 (integrated in camera)	Perimeter Defender on Q1952	Intelligent Video Analytics on the edge	Intelligent Video Analytics on the edge	Embedded Firmware
Version Number	VAL5	3.1.0	8.10	8.10	2.6.01.05.53098 DH_TPC-BF5X01-TB_ MultiLang_PN_V2.630. 0000000.16.R.220412
Which detection type is used (object-oriented or pixel-oriented detection)	Object-oriented for people and/or vehicles	P+0	0	0	0
Analysis made (server/edge)	Edge	Edge	Edge	Edge	Edge

Dallmeier	Hikvision RGB	Hikvision Thermal	Honeywell	Milestone/Saimos/Vivotek	Mobotix
Excellent	Highly recommended	Recommended	Recommended	Highly recommended	Excellent
Highly recommended	Highly recommended	Highly recommended	Highly recommended	Excellent	Excellent
91%	57%	91%	94%	89%	34%
82%	30%	70%	100%	83%	57%
91%	56%	75%	100%	81%	44%
93%	53%	90%	97%	90%	40%
90%	23%	86%	90%	86%	41%
96%	54%	96%	96%	89%	21%
85%	54%	77%	95%	87%	38%
100%	18%	76%	100%	76%	82%
91%	58%	93%	95%	95%	58%
91%	17%	61%	100%	65%	0%
91%	46%	83%	96%	86%	42%

Dallmeier	Hikvision RGB	Hikvision Thermal	Honeywell	Milestone/Saimos/Vivotek	Mobotix
Dallmeier Electronic		Hikvision	Dahua	Vivotek	Mobotix
Panamera S8 190 / 30 DN / C Ultraline		DS-2TD2138-25/QY	DH-TPC-BF5421	TB9330-E	M73TB-640R150/8DN150
190 Mpe; >160 Px/m		384 x 288	400 x 300	384 x 256	4K
No interchangeable lens		25 mm / F1.1	13 mm	19 mm	18 mm f / 1.8
FOV (h) 30° FOV (v) 52°				20 m	5.53 m
€ 16,620		€ 2,662	€ 6,100 MSRP	€ 4,118	€ 8,073

	Hikvision		Honeywell	Vivotek	
	iDS-2CD7A86G0-IZHS(Y)		HC60WB5R2	Vivotek PTZ SD9368-EHL und Box IP9165-HT-V2	
	8 MP		5 MP	2 MP / 2 MP	
	8-32 mm / F1.7 bis F1.73				
	tbd		2.7 – 13.5 mm	4,25 – 170 mm/ camera integrated lens	
	20 m		20 m	5 m	
	€ 897		€ 850	€ 2035 / € 645	
	Lens included in camera price				

Dallmeier Electronic	Hikvision	Hikvision	Honeywell	Saimos	Mobotix AG
IPS 10.000 MKII	VCA analytics integrated on firmware (Firmware designation see system description).	VCA analytics integrated on firmware (Firmware designation see system description).	Intrusion Trace	Saimos Video Analytics Standard	Activity Sensor
10.7.2.SpB			XO 5	2022 R1 / 1.4.1	2.1
P+O	0	0	P	Combination Deep Learning object classification and motion/pixel analysis.	P
Edge und Server	Edge	Edge	Server	Server	Edge

A combination of thermal and RGB cameras shows good results

In general, using multiple detection types can increase security, especially if one technology can compensate for the weaknesses of the other. This can be done by using different video sensors as in our test for example, or by adding completely different technology such as radar, LiDAR, sensor cables, etc. One can then speak of 'sensor fusion'. Our test has shown that there are also systems that show very good results with only one video sensor. However, as long as it does not exceed the user's budget, a combination of thermal and RGB cameras in particular can be the means of choice for effective perimeter protection. As expected, thermal cameras provide better detection at night than RGB cameras, even with IR lighting switched on. Thermal cameras, on the other hand, perform worse on warm days than in cooler weather.

Failing to prepare is preparing to fail

All decision-makers for security-relevant investments, all planners, installers, system integrators, insurers and operators are advised always to precisely analyze their own specific needs, if necessary supported by independent and experienced experts. It is easier to find the most suitable system for one's own requirements and circumstances when based on a well-prepared analysis.

Different rules apply out in the field than in the laboratory

No real test is complete without the difficulties arising in the real world: 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. One hundred percent certainty, as we know, exists neither in projects nor in the people who implement them.

We must not stop learning

While we have not mentioned some details in this report in order to avoid perpetrator training, such as the jamming measures used and certain types of movement, all participating manufacturers have been informed in detail about possible weaknesses in their systems so that they can optimize their systems and make appropriate system adjustments when implementing projects in perimeter protection. Already the willingness to participate in this test and the significant effort of the participating manufacturers shows you as a user that these manufacturers cover this market segment with great professionalism and we firmly expect that they will further optimize their systems for their customers with the help of the findings of this test. Working on security systems is a constant learning and improving process. Perpetrators don't sleep.

After the test is before the test

Constant learning and improving applies to us, too, of course. Wiley and GIT will undertake more testing. We can continue to improve our work and correct mistakes we made during preparation. We will listen to the suggestions and proposals of our partners and the manufacturers and there will be the possibility of a test for new manufacturers and those already tested to see what improvements can and could possibly be made.

This test is a snapshot in time. The manufacturers have without exception thanked us for the 'treasure of scenarios' and will extend this. That means: depending on the respective manufacturer, we can expect improved systems in the form of further developed hardware, new firmware, upgrades and updates in the near future. We will consider the further developments and systems of other manufacturers in a new test series. In addition, further tests in other product groups and industries should provide a good basis for security decision-makers.

Stay tuned for more news on testing. To stay up to date, we recommend that you subscribe to our free newsletter by entering your preferred e-mail at www.GIT-SECURITY.de/newsletter.

If you have any further questions or suggestions, please feel free to contact us by sending an e-mail to GIT-GS@Wiley.com



GIT SECURITY **EMEA**

INNER COVER – SECURITY

KEYLESS WORLD

DIGITAL
LOCKING SYSTEM

Simons Voss
technologies



“A superlative school building project”:
the Unterföhring school campus
– with lock technology from
SimonsVoss

INNER COVER: ACCESS CONTROL

School's Out

Digital Locking Technology on the Unterföhring School Campus

“A milestone in educational opportunities” and “A superlative school building project” — those were the headlines when the new school campus in Unterföhring was opened. The site, consisting of various different buildings, stands out not only because of its size but also through its technical equipment. This includes the digital lock system from SimonsVoss Technologies whose head office is close to the school campus.

“Such a project is somewhat special because of its scale,” said SimonsVoss CEO Bernhard Sommer. “We were very pleased to complete this as a representative reference installation very close to us, directly here in Unterföhring.” The project was developed on the 50,000 m² site on the Mitterfeldallee by the Munich Architects Felix+Jonas, while project management was carried out by Hitzler Ingenieure (Munich).

A special characteristic of the site that stretches over some 350 meters is the school boulevard, which is the connecting element between the High School, the Elementary School with lunchtime supervision, the daycare center, the dining hall, and the sports building with its generously sized open spaces. Hitzler Ingenieure described the layout concept in this way: “The barrier-free access architecture of the buildings fulfills the pedagogical requirements for flexibly useable rooms and learning areas with a high environmental quality. The generously sized and variable room structures in all the school buildings enable the formation of traditional classrooms, but also of study areas for self-determined learning. The variety of usage options and the very modern equipment provide the flexibility to adapt to contemporary needs and the

many methods of learning as well as to support modern teaching strategies.”

System Adaptable Anytime

Flexibility is the keyword for the planning and implementation of access control on the Unterföhring school campus that caters for some 1,500 pupils and their corresponding teaching and administration staff. Lothar Kapfenberger, head of the local planning office, says, “Mechanical locking systems were not an option for an object of this size with its various different buildings and user groups. We want to provide a high level of security, flexibility and reliability here, and that is only possible with digital locking technology. We can adapt this system at any time to our current requirements.”

Access Rights Automatically Updated

The SimonsVoss 3060 system has been implemented on the school campus as a virtual network, which enables central management of the locking system. In addition, the external doors and special access points of the buildings have been fitted with SmartRelais 3 readers (SREL 3). A total of 130 of these units were installed, mainly on the external doors, and combined with motorized locks or other electric door retention equipment.

The SREL 3s are connected to the network and serve as gateways to update the access rights. Updated data is passed via Ethernet from the LSM software used by the system administrators to the gateways and from there to the identification tokens. This means the access rights of each user are automatically updated when they enter. The advantages of this solution are in the simplified infrastructure because only the central gateways are networked, with a correspondingly small administration load. Flexibility is provided in this constellation not only in changes to the users and usage, but also to future options. For example, it is possible to bring specific and especially important doors online into the network, and the fine tuning of the locking plan can be done at any time even without a network by using the programming unit.

Because there is a relatively high number of users who had to be equipped with a simple and economic ID medium on the school campus, the local authority decided to use a passive solution with smart cards instead of active transponders. Around 400 Mifare Desfire lock cards were issued to teachers and administration staff. The data transfer takes place automatically as soon as the smart card comes within 1 cm of a reader.

Internal Readers on Both Sides

The doors of the classrooms and technical rooms on the school campus are fitted with a total of 600 digital SmartHandle AX SC door handles in vertical orientation with an integrated reader ('SC' stands for operation by smart card). The integrated battery in the handle is sufficient for up to 200,000 operations. The technological heart of the SmartHandle AX is its secure element that stores access events (up to 3,000) and encrypts any security-relevant data.

There is also flexibility in installation: the modular construction allows the SmartHandle AX to be adapted to the particular door thickness, distance and shape of all the relevant doors on the school campus. Some of the doors were fitted with the SmartHandle version that reads cards on both sides. The two handles, inside and outside, are not connected but operate independently. The advantage of this is that different authorization can be set up for each side of the door. The black-grey/silver lock casing provides an attractive visual accent to the internal doors.

SimonsVoss have provided digital dual-handle cylinders from the 3060 system with an anti-panic function for the technical rooms. These cylinders freely rotate on both sides so that the door can be locked and unlocked from inside and outside with an authorized ID token (smart cards on the school campus). In a panic situation, the door can also be opened without any ID. In total, around 200 cylinders of this type were installed in various buildings.

Many Users – Little Administration

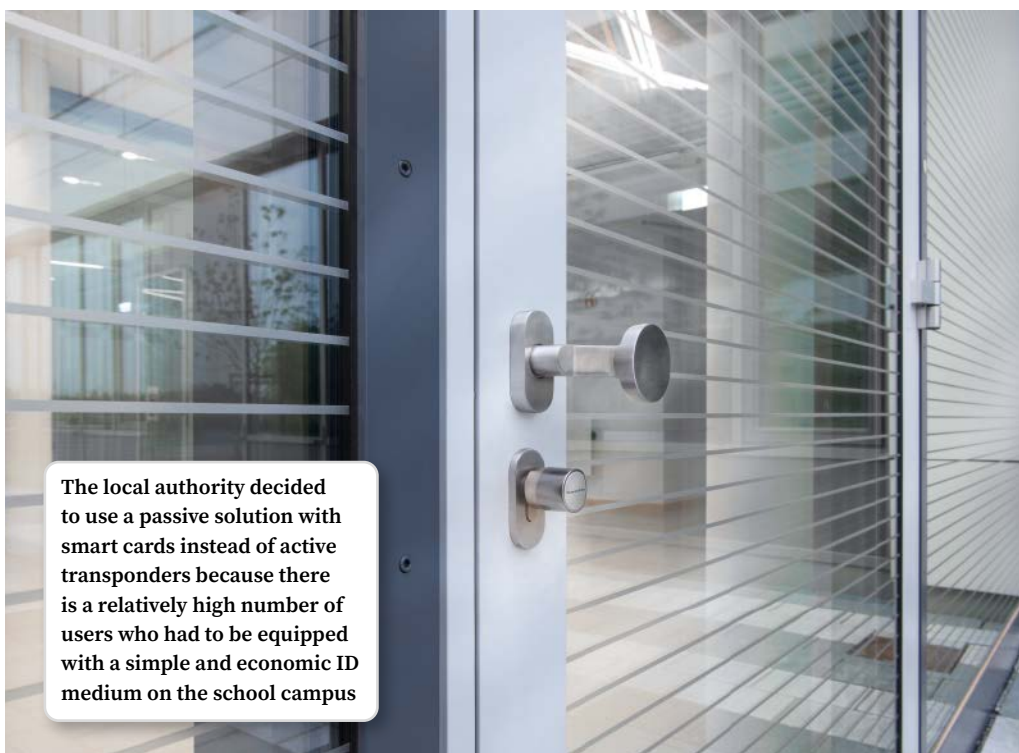
The digital locking system has been in full operation since all the school buildings were put into use in 2021. The advantages quickly became obvious in practice – if a smart card is lost, for example, the access rights can be deleted immediately by the administrators, also for security-relevant doors, and re-programmed. User changes and different usage of rooms are everyday occurrences on the school campus – not least for the sports hall. The access rights that have been issued can be easily and quickly adapted to the changing usage. And with the SimonsVoss company just down the road in Unterföhring, the administrators truly have a direct line to the manufacturers.

CONTACT

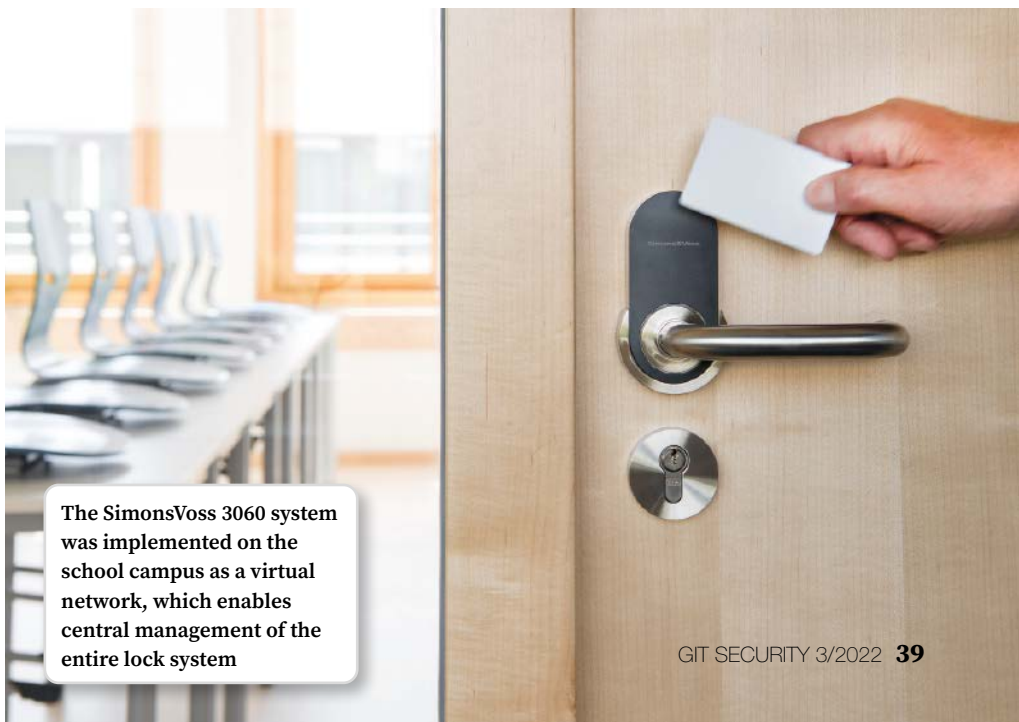
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Security, flexibility and reliability – thanks to digital lock technology



The local authority decided to use a passive solution with smart cards instead of active transponders because there is a relatively high number of users who had to be equipped with a simple and economic ID medium on the school campus



The SimonsVoss 3060 system was implemented on the school campus as a virtual network, which enables central management of the entire lock system



Cards are easy to use and can be flexibly programmed to allow access at certain times of particular days

ACCESS CONTROL

Variations on a Key

The Future is Smart with an Upgrade to a ÜLock

Südmetail Schließsysteme develops and manufactures electromechanical locks and access solutions 'Made in Germany'. An experienced and motivated team at the company's headquarters in Leipzig works together with highly qualified partners on smart solutions for electronic access management. Because needs change over time, Südmetail strives to continuously optimize and improve its products. Their aim is to make life a little more convenient, safer and therefore easier.

The manufacturer's main series is a product group of locks with panic function, which are available in several variants: ÜLock-B Cable, ÜLock-B Battery and ÜLock-B Inductive. The last two are ideal for retro-fitting because it is not necessary to run any cables. Brand new on the market is the ÜLock-Z, which is the ÜLock-B with access control on both sides, i. e. without a panic function for particularly sensitive rooms. Here too, there are wired, battery-operated and inductive versions.

Security from Both Sides

ÜLock-B locks provide security on both sides of the door whereby the protection of human life and the protection of property enter into a synergy. A panic function in the direction of the escape route ensures a safe means of escape in an emergency. The self-locking function ensures that the door otherwise always remains locked. From the outside, the lock offers no surface for attack

because the electronics are located in the lock case and the lock has a high resistance against mechanical manipulation. In addition, the data transmission between the lock, RFID card and battery-powered RFID reader is encrypted in the best possible way. This provides optimum protection against burglary.

Comfort and Design

The door furniture can be freely selected according to the design requirements of the respective object – additional or new door fittings are not mandatory. Gaining access is also very convenient for the users: a valid card is held in front of the reader and the door can then be opened by pressing the door handle. Thanks to the new battery-powered ÜManagement RFID reader, installation is possible without any wiring, which is particularly interesting for retrofitting. Both the ÜLock and the RFID reader are now available in a wireless battery-powered version. They com-

municate with each other via encrypted radio. The 'Data on Card' access control operating principle eliminates the need for network cabling between the doors and the computer. As only a short time is needed for setup, the new reader is simple to install and commission.

System Management

ÜManagement 2.0 is license-free administration software for access control, with which single objects, but also small to medium-sized hotels or several objects can be administered at the same time. Authorizations and authorization groups/user groups can be assigned to the individual keys via the software. The installation of the software can be either very simple for a single-user version, or on an SQL server for multiple workstations.

The software offers a wide range of features. If a transponder is lost, for example, there is little risk to security because it can be blocked or blacklisted very simply.

Individual rights assignment and automatic locking are also useful features. There are no license fees, and house technicians will appreciate the clear layout and flexible functions. While the 'Management' operating mode is ideal for small to medium-sized applications thanks to its simple operation, the 'Professional' operating mode enables further flexible options for larger applications without having to sacrifice clarity.

Different defined areas can be selected for each time zone, and rooms and apartment doors can be assigned to a building or a corridor, which means that access to the doors does not have to be individually set. Common rooms can be assigned to a door category and a door can be assigned to additional groups, so that it automatically receives authorization to the selected door groups (such as for a swimming pool or a sauna). Time zones also enable automatic unlocking times: for example, the entrance door (multipoint locking) with an electronic cylinder can be automatically unlocked in the morning and locked again in the even-



No need to carry a bunch of keys anymore – a card will do. The battery-powered ÜManagement RFID reader requires no wiring to be installed

ing. In the case of an office door fitted with a ÜLock, the door handle can optionally be permanently coupled as long as a person is in the office. The cabinet in the office can be secured with a cabinet lock and retrofitted with very little effort.

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SAFE CITY

Towards a More Secure City

STid's CEO Vincent Dupart Explains the Focus on High Security Trends

Smart cities, safe cities... cities are constantly reinventing themselves. The current issues related to city security clearly illustrate the need for an intelligent approach to security and the adaptation to new realities.

Safe City, an Opportunity to Make the City More Sustainable and Smarter

The safe city concept remains a concern at the heart of territorial security issues. It is considered a priority because the percentage of the world's population that lives in cities will rise from 55 % today to 68 % by 2050 (<https://population.un.org/wup/Download/>). On the level of a city safety and security is very much about ensuring the protection of citizens and securing of residential, leisure and work areas and ascertain continuity of essential services (drinking water networks, hospitals, policies, food).

A city is said to be safer for its citizens when all its facilities are secure to use. Just like the critical infrastructures, who secure the operational continuity of a country, it's important to safeguard essential and vital services to the operation and development of the city. Healthcare facilities, for example, are committed to provide protection against threats as burglary and intruders, while safeguarding the security of their staff and patients. In brief, all different areas of the site should be accessible with ease, but only to authorized people.

Protecting People, Assets and Data

After perceiving a steep increase the security risks that our partners and their clients are faced with, we developed innovative products and services to ensure the security of essential facilities and critical infrastructures.

STid's mission is to protect people, their property and data through secure access and identification. For more than 25 years, STid has created and marketed identification solutions for high security access control, both physical and logical, as well as Automatic Vehicle Identification. At STid, we develop technology to make the everyday lives of people easier while ensuring effective data protection. STid readers and solutions are compatible with all access control systems currently available. The modular setup of STid's unique

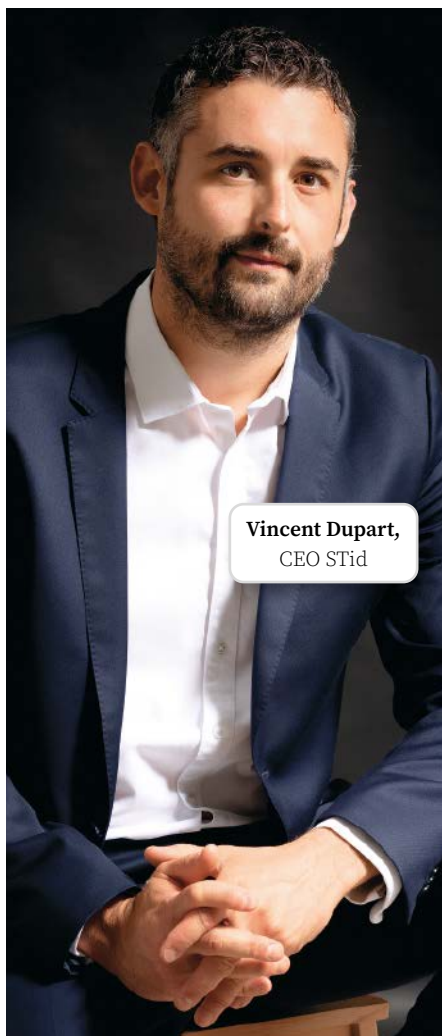
readers futureproofs the infrastructure of end users and it allows partners to offer enhanced levels of security to their clients, even when their secured estates grow or their needs change (internal staff mobility, building reconfiguration, etc.) or when technological developments (biometrics, QR Code, etc.) are required.

Combining High Security and Intuitiveness for a Safer City

Securing workplaces is a priority for security departments of any organisation that has become aware of the importance of selecting and deploying trusted technologies that offer certified and interoperable security. As opposed to the "proprietary technologies" which were the trend of the

1990s — 2000s era, these new technologies are open, scalable and are based on standards. They allow organisations to remain independent of specific suppliers and they support organisations in their quest to remain in control of safety and security. This is the strength of the SSCP protocol, certified by French Cyber Security Authority (ANSSI). The protocol is synonymous with freedom, interoperability and responsiveness to threats.

Incidents related to unauthorized access are often a result of the "human factor", usually the weakest link in any security system. Users are more likely to adopt simple and effective systems. If you secure a building, site or perimeter, you can procure and deploy the most sophisticated security measures and equipment, but in the end people will need to be able to use and manage the implemented systems intuitively and effectively. It should never interfere with their ability to perform their job or activity of choice. That is why we spend so many resources on development of features in our products that comply with the requirement of instinctive use. Carrying and applying STid technology should feel natural and safe. No hassle. And, of course, without any compromise on security levels. Spectre nano, our UHF & Bluetooth multi-technology reader, is a perfect example of our vision on security technology and the translation of that vision into the design guidelines and of course also the final solution that we are now bringing to market.



Vincent Dupart,
CEO STid

Meet us at

SECURITY ESSEN | booth 6C22

Intersec Saudi Arabia | booth 2-E29

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Special
Focus

Security for Safe Cities

1. What approach and solutions do you recommend to make our cities safer?
2. What are the biggest challenges in this field and how do you handle them?
3. Please describe a success case where you implemented your system in a 'Safe City' project?



Dieter Dallmeier

Founder & CEO,
Dallmeier electronic

www.dallmeier.com

1. As a manufacturer of video technology, we naturally concentrate on the area of video observation and video surveillance. We recommend the use of our patented "Panomera" multifocal sensor cameras. The special feature of these systems is that each camera combines up to eight lenses and video sensors of different focal lengths in one system. This technology is revolutionary, especially in the field of urban surveillance, as it enables the management of even the most complex situations in a safe manner, while making do with considerably fewer camera systems than all other solutions that rely on conventional video technology.

2. The great challenge for video security in public places is to maintain as good an overview as possible of large spatial contexts and at the same time to realise recordings that are as detailed as possible in "every corner" of the area to be secured and thus usable in court. With conventional camera technology, either one – a large overall view using megapixel cameras – or the other – detailed views using PTZ cameras – is possible. But there is no combination:

if, for example, an operator zooms into a detailed area with a PTZ camera, the overall view is lost; when megapixel cameras are used, the resolution in detail is missing. With a multifocal camera, users combine the good overview of a megapixel camera with the possibility of theoretically opening any number of "virtual PTZs" at the click of a mouse.

3. In Germany alone, more than 30 large and very large cities now rely on Dallmeier security solutions. One of our first major projects was the "Cologne Cathedral Plateau", a public square with approx. 8,800 square metres. After the sad events of New Year's Eve 2015, where after riots over 1200 charges were brought only 37 convictions followed because the video images were unusable, the protection of the area was put out to tender again. Dallmeier won because our solution only required eight camera systems at two installation points -- achieving a resolution density of 250 pixels per metre or more across the entire area, the highest resolution quality according to DIN EN 62767-4 and the level that is typically considered "court-proof".



Yavor Gueorguiev

Application Delivery
Manager, Intelligent Mobility
at Genetec EMEA

www.genetec.com

1. Despite increased investment in public safety technology, some agencies are still struggling to move safe city initiatives forward. Their challenges stem from two key trends: departmental siloes and data overload. As more devices are added to the city network, more agencies are inundated with data. Trying to make sense of the information not only slows emergency response but also limits cities' ability to spot issues and make changes that can positively impact their communities.

Departments responsible for managing safe city projects are also known to work independently. This can often lead to redundant work and slower response times to incidents. Safe city initiatives can only succeed when data is consolidated and shared across departments. Increased collaboration creates opportunities to better serve the needs of the community.

2. To increase public safety, it is invaluable to invest in a unified security platform that consolidates data from numerous systems – such as IP video surveillance, access control and automatic number plate recognition – in a single interface. This unified vision helps to improve collaboration and reduce security

risks in the city environment. With a unified platform, you can also plug in a digital evidence management system (DEMS) to speed up investigations. This platform enables Police to collect, manage, and share digital evidence from public and private networks with internal and external stakeholders. If set up correctly, it is a win-win for all parties. Citizens receive improved public safety, police forces benefit from time and cost efficiencies, and businesses can expect a faster response to incidents.

3. The Polish city of Lodz deployed our flagship unified platform, Security Center, to manage their camera network and reduce incidents of crime on its streets. A cutting-edge digital monitoring system was introduced, with additional cameras installed at junctions, parks, and squares to deter criminals and make citizens feel safe. Security Center allows operators in the city to access video footage from multiple systems and manage a coordinated response to incidents. The city of Lodz found that about 1,000 fewer crimes were reported to operators after only a year of moving to a unified solution. The platform was commended by the city for improving their public safety strategy, while also maintaining citizen privacy.

1. Our approach clearly focuses on the priorities of smart cities. These are, generally speaking, to protect people, businesses, and assets. In detail, it means to assure business continuity, namely, to minimize disruption especially of critical infrastructure. We support our customers in complying with security policies, laws, and regulations. We care for sustainability and support the digital transformation.

A solution that puts all these aspects in the center adds value to the attractiveness of a smart city. Our solutions hence focus on a completely digital platform that can empower cities with, for instance, the right situational awareness that can not only connect to the main safety and security systems in the field, but also be an open platform by design to integrate other data sources. Another feature is to allow for data insights based on the data gathered from various sources. Fast and smart responses to and resolution of incidents as well as proactive planning of activities to avoid incidents is another crucial aspect.

2. The biggest challenge is not only the tremendous numbers of connected data points and incidents that smart cities typically need to deal with, but also the requirement that numerous different security subsystems need to be interconnected. Additionally, the digital platform and, respectively, the security management system (SMS) must be able to integrate into proven technologies and new innovations alike.

Therefore, it is key to have a SMS with a modern, multi-layer software architecture in place which is easily scalable and allows for rapid adaptation to the number of signals to be processed. Leveraging data to gain actionable insights and react appropriately is key. The system must be flexible enough to respond to customer-specific requirements and offer an open architecture allowing the integration of existing components and future services.

3. Expo 2020 Dubai was the Arab world's largest event ever and was built like a city of the future. It hosted more than 200 participants, attracting over 24 million visitors from more than 190 countries. Siemens has been responsible for all security systems at the Expo 2020 site, which is roughly twice the size of Monaco, with more than 80 interfaces, 17,500 connected surveillance cameras, 3,500 doors, 200,000 data points, 100 operators in 9 distributed control rooms and 800 mobile security guards.

However, the security solutions from Siemens were not only designed to meet event-specific requirements. They are now being repurposed to support Expo 2020's legacy project, the human-centric smart community of District 2020, an innovation-driven ecosystem and mixed-use development area which has been in use in Dubai South since the World Expo closed its doors. It now serves as a blueprint of future safe cities.



Werner Braun

Global Head of
Portfolio Management
Security at Siemens
Smart Infrastructure

[www.siemens.de/
smart-infrastructure](http://www.siemens.de/smart-infrastructure)

1. From our point of view, security aspects of a safe city cover three main areas, the first one is public security incidents caused by vandalism, theft, resulting in social safety concerns. Second, it is people's travelling stress caused by road and traffic incidents, traffic disorders. Third, it's city's environmental governance issues caused by natural or environmental disasters, such as floods and fire. Hikvision's safe city system covers all three aspects, providing end to end solutions to make our cities safer.

Accordingly, in terms of public security, the company provides full-dimensional perception technology that helps cover critical security areas, such as city plazas, intersections and parking facilities. For those kinds of scenarios, Hikvision's PanoVu and TandemVu products provide wide coverage without blind spots, giving security operators complete situational awareness and details when they are needed. Security products with Hikvision's DarkFighter technology helps capture superior colored images even at night. Those advanced security devices greatly help improving management efficiency.

In terms of traffic safety, Hikvision provides an overall traffic management solution, through vehicle driving behavior analysis and violation detection, to improve better traffic management, as well as road and driver's safety.

2. When public security and traffic incidents happen, the city management department often need to conduct case analysis and investigation by referring to the video, which is very time-consuming.

Even security coverage is complete and intense in the city, it is still hard to do. Hikvision provides structured video based on AI technology, that is to say, the solution is able to analyse anomalies such as abnormal driving behaviors, for example using an illegal license plate or driving the wrong way. Through advanced video technology and system, city management can be greatly improved.

3. A recent case study is the municipality of Tres Cantos in Spain which has deployed an innovative smart city solution from Hikvision to speed up journey times and maximize road safety and security for residents, commuters and local businesses. With constant movement of people and vehicles in and out of Tres Cantos, the municipality needed smart city solutions that could monitor traffic conditions in real time – enabling 're-routing' and rapid incident responses to minimize congestion.

The Hikvision solution incorporates a total of 23 cameras located at the entrances to the municipality – including PTZ, PanoVu cameras, and ANPR cameras that provide situational awareness of traffic conditions. Real-time traffic and vehicle information, such as the flow of traffic and car accidents, can be aggregated and dynamically displayed in a central control room. The system has been particularly useful in terms of reacting to planned and unplanned road and lane closures. In such cases, traffic can be rerouted quickly and effectively to minimize delays and other negative impacts for residents and commuters.



Gaolong Lin

City Solution Manager
at Hikvision

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SAFE CITY

Making Smart Cities Smarter with VSaaS

VSaaS Platforms Should be Able to Handle Both Fixed and Mobile Feeds

The age of smart cities is well and truly here. There are 118 global smart cities according to the annual IMD-SUTD Smart City Index Report and IDC has predicted that spending by smart cities will reach \$203 billion by 2024. Particular focus areas of investment are public safety and civic engagement, amongst others.

Defined by the European Commission as a place where traditional networks and services are made more efficient with the use of digital solutions, key technologies like video surveillance are being relied upon more heavily than ever. With constant demands to perform, improve and innovate.

Video surveillance has been deployed in cities around the world for years as a primary method of monitoring population movements and preventing crime. Yet, the technological capabilities of surveillance systems have evolved considerably in the past decade. Smart cities have been witnesses to the fundamental shifts that have occurred in the gathering, analysing, sharing and storing of video footage and data.

However, older systems are struggling to keep pace with the speed of digital transformation currently occurring in European smart cities and beyond.

The transition to smart – and smarter – cities therefore requires better technology to meet the ever-growing role and demands of video surveillance. This is where cloud-based Video Surveillance-as-a-Service (VSaaS) enters the conversation.

London: 13 Cameras per 1,000 People

Cloud-based VSaaS brings a whole host of benefits to urban environments, often helping them to become smarter by optimising existing hardware, rather than having to replace it. Tearing out all existing devices just isn't feasible for most municipalities. London, for example, is the ninth most surveilled city in the world with over 127,000 public CCTV cameras. That equates to

more than 13 cameras per 1,000 people. By transforming existing video security systems, VSaaS platforms are essential for cities looking to become smarter without requiring extortionate budgets. They allow new services to be developed helping to make the overall system more proactive, intelligent, and efficient at a much lower cost.

Crowd Flow Analytics Optimises Movement of People

The move to the cloud means that organisations no longer have to maintain expensive on-site storage capabilities to hold security camera footage. It also heralds a shift in the type of video analytics that can prove effective for a range of scenarios, such as crowd flow analytics to help optimise the

movement of people, and parking space utilisation analytics to better inform pricing strategies that ensure people find a space.

H.264 Proves Expensive: Relying on it Requires Consistent Wide Bandwidths

Transition to the cloud also allows users to access footage anywhere, at any time from one centralised platform, from which vital footage can be shared with approved parties to make the overall system more efficient and fit for purpose. However, not all VSaaS platforms are created equally. Many rely on H.264, a codec originally designed for the entertainment industry. It requires consistent high bandwidths to deliver reliable video and can therefore prove expensive to operate and maintain. Organisations implementing cloud-based VSaaS should instead seek solutions specifically designed to efficiently move live video, with limited bandwidth, over constrained networks.

Proprietary Technology Especially Suitable in Busy Urban Environments

For example, Digital Barriers solutions are built on its own patented proprietary technology, recognised by Vodafone to use 50-75% less bandwidth than competing technologies. Lower bandwidths ultimately equate to lower costs and improved performance, especially in busy urban environments.

In addition to the shift to the cloud, the rollout of 5G will also have a huge impact on remote video monitoring systems. 5G is specifically designed to support a massive number of end-points. In security terms that can equate to a greater number of body-worn cameras, for example, as well as the use of wireless IP-cameras which can be set up to monitor one-off or short-term situations being used by an organisation. Gartner predicted, in 2019, that outdoor surveillance cameras would represent the single largest market globally for 5G 'Internet of Things' applications in the years leading up to 2023 – that prediction is proving to be exceptionally prescient.

VSaaS Platform for Fixed and Mobile Feeds

Having decided upon cloud-based VSaaS as the way forward to make smart cities smarter, an important question emerges: can the VSaaS platform handle both fixed and mobile feeds? The number of fixed CCTV cameras will only grow along with the use of bodycams and other mobile cameras, which are increasingly being rolled out amongst law enforcement, as well as in other key industries such as utilities, transport, retail and delivery. Digital Barriers' VSaaS platform works across both types of feed, helping to transform the current siloed approach used in smart cities to deliver live streamed video. It is also able to operate at the edge under much lower bandwidths to deliver real-time video

streaming across areas with lower connectivity and, crucially for smart cities, more built up and congested areas.

These are all key considerations for organisations looking to VSaaS to improve efficiency and transform anything from traffic management and monitoring in a busy city centre, to supporting emergency services to help them make better informed, time-critical decisions on the ground.

Is the Future VSaaS?

VSaaS platforms deliver live-streamed and recorded video where it's needed, when it's needed across smart cities. Not only does VSaaS improve efficiency, it makes smart cities smarter by optimising legacy technology and, using a particular platform, introducing key new innovations to improve video surveillance systems at little additional cost. Leveraging the benefits brought by the transition to the cloud and the rollout of 5G, cloud-based VSaaS supports traditional networks and services, such as law enforcement and traffic control, to propel smart cities to the next stage of technological development.

CONTACT

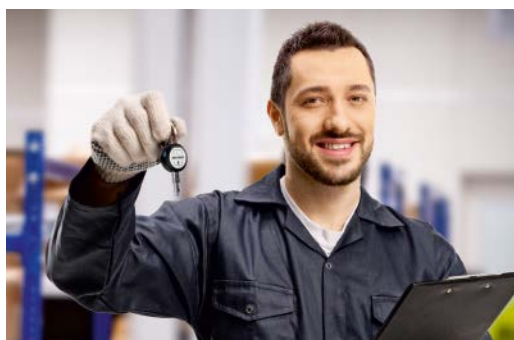
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SPECIAL FOCUS SAFE CITY

How to Implement a Safe City Concept

Cities are becoming more and more crowded, and as a result, municipal as well as police resources are under great pressure to investigate crimes and realize crime prevention for the benefit of citizens at the lowest possible cost.

Currently, many video surveillance systems are not as efficient as they could be. Police investigations are often hampered by blind spots in the video networks and low-quality images. Another problem is data storage and retrieval: incidents can only be followed up with immense effort and therefore very slowly. Data loss can bring investigations to a complete standstill. However, new technologies are emerging to help police and municipal authorities fight crime more effectively.

1. Investment in Digital Infrastructure

With implementing in a better digital infrastructure, a city can increase digital tools for public safety. If communication systems are upgraded, CCTV cameras can operate better together, as well as body cameras from police forces. Command centers are highly efficient and e.g. a predictive data analysis system can bring a big advantage to the level of safety in the city.

Example for Roll-out of Digital Infrastructure

An example of a connected safe city is Nairobi, Kenya. According to the BBC (1), communication networks from Huawei

link 1,800 surveillance cameras with 195 police stations and 7,600 police officers. After recent terrorist strikes Kenya government has invested in the high-speed private broadband network. Its National Police Service Commission has now linked command centers with over 1,500 high-definition cameras in downtown Nairobi, as well as 200 cameras at checkpoints and wireless devices of field officers. The urban centre is equipped with panoramic video surveillance and a highly-agile command and dispatch setup, running on satellite-based GPS and software-based GIS. Managing all the video data efficiently, an intelligent video analysis platform was installed, including real-time surveillance, video browsing, data sharing, and evidence collection.

2. Updating Existing Technology Systems

Buying thousands of new cameras is very cost-intensive. However, it is possible to adapt even older camera models to newer standards through cleverly implemented analysis or management software or even cloud access. Sometimes it is also suitable to install some cameras with a better overview, e.g. fisheye cameras at overview

points, in order to reduce the number of required end devices.

Cloud-Based Video Surveillance

According to Digital Barriers, Cloud-based VSaaS brings a whole host of benefits to urban environments, often helping them to become smarter by optimising existing hardware, rather than having to replace it. Tearing out all existing devices just isn't feasible for most municipalities. London, for example, is the ninth most surveilled city in the world with over 127,000 public CCTV cameras. That equates to more than 13 cameras per 1,000 people. By transforming existing video security systems, VSaaS platforms are essential for cities looking to become smarter without requiring extortionate budgets. They allow new services to be developed helping to make the overall system more proactive, intelligent, and efficient at a much lower cost. The move to the cloud means that organisations no longer have to maintain expensive on-site storage capabilities to hold security camera footage. For example, Digital Barriers solutions are built on its own patented proprietary technology, recognised by Vodafone to use 50-75% less bandwidth than compet-

ing technologies. Lower bandwidths ultimately equate to lower costs and improved performance, especially in busy urban environments.

3. The Great Benefit of Compression

Since security is about awareness on the one hand and the authorities' ability to act on the other, it is essential to be able to transmit, evaluate and recognize information quickly. To ensure that all functions smoothly and that the system is not slowed down under the huge volume of data, technology is needed that can quickly compress and unpack data volumes without losing any information. What use is there to have an all clear and high-resolution image of an 8k camera, if it slows down bandwidth for quick solutions and communication.

4. Network Capabilities of City Surveillance and Body Cams

The first point is about creating the resources in the first place so that networks can be established. Now this should also be applied and implemented together with the police and the city departments. If a system can bring together and evaluate the data from all of the fixed surveillance devices and maybe even body cameras from police officers, then it can be the perfect interplay of technologies.

Everything Needs to Work Together Seamlessly

Joel Ordonez, Regional Sales Manager for IndigoVision in Peru and Ecuador, explains why it's so important that public surveillance systems enable a fast response to any type of incident: "Responding quickly is critical, not only to solve the present incident but it also means that you can help to prevent future incidents. For example many cities allocate "red zones", which are the most dangerous areas in the district. In this zone you know incidents are more likely to occur, so you can start to make plans for how to prevent them, creating a smarter response to crime. In these "red zones", you can divert more resources to ensure it becomes a safer area, for example, by installing more HD cameras in specific locations across the district. As soon as an incident happens, such as a theft, the perpetrator can be tracked immediately and clear evidence can be provided to law enforcement to prosecute them.

Henry Gambeta, the Control Room Manager in the San Borja municipality of Peru, explains the benefit of using a powerful Video Management Software to control your cameras and integrations: "If you're not using software that allows you to control the various camera brands, maintaining control of your system becomes more difficult and, as a consequence, response times are increased in the event of an incident."

The complete end-to-end surveillance solution – combining your video management software, cameras, NVRs, analytics and integrations – means you can more easily control your system components and respond more effectively to incidents, helping to reduce their occurrence. The fewer incidents that your city has, the safer people will feel who live in your district and may encourage more visitors and tourists to your area, whose presence can stimulate investment in local businesses and public spaces.

The 2022 Safe City Project in Karachi City

There is a much higher rate of highly-surveilled cities in many countries in Asia. An example of a very recent safe city project in Asia is Karachi City in Pakistan.

"Business Recorder"⁽²⁾ reports on 10,000 new CCTV (Close Circuit Television) cam-

eras that will be installed in Karachi. The existing 2,000 cameras will be upgraded in this regard. The project is a joint venture between the Sindh government and the National Radio Telecommunication Corporation (NRTC). The retrofit is divided into two phases, where in the first phase it is planned to install 4000 cameras at different points of the city and upgrade 2000 existing cameras. In the second phase, another 6000 CCTV cameras are to be installed on a large scale. About 17 international companies will be involved in the project.

Some important components were also added during the planning process. These include upgrades to the existing CCTV surveillance system, an emergency response system and vehicles, personnel and training facilities, and a digital communications network.

According to SSCA officials, the following brands are involved in the project: Amped Five, Avaya, Caterpillar, Cisco, DJI, Global Connect Synergy, Hikvision, HP, Hystar, Hytera, NRTC, Optech, Oracle, Schneider/APC, Toyota/Suzuki, Vericom.

Sources

- (1) <https://www.bbc.com/future/bespoke/specials/connected-world/government.html>
- (2) <https://www.brecorder.com/news/40182362/safe-city-project-10000-new-cctv-cameras-being-installed-in-karachi>

Sometimes it is appropriate and more cost-effective to install only a small number of cameras, e.g. fisheye or panoramic cameras at overview points, in order to reduce the number of required end devices



Any incidents along the length of the SPV, especially at junctions like this, will be quickly recognized by the AI analysis of images from some 600 Hanwha Techwin cameras



SAFE CITY

Life in the Fast Lane

Hanwha Techwin Helps to Keep Traffic Moving on Italy's Pedemontana Veneta Highway

A new Italian highway relies on AI-powered video technology to keep traffic moving smoothly and safely and to provide operators with crucial information on traffic volume and speed.

The need for a motorway to link the cities of Vicenza and Treviso emerged in the 1970s as the Venetian countryside became increasingly urbanized, while the opening of the European Union to the east in the 1990s also brought more traffic across the region. To address this, the first stone of what is now the Pedemontana Veneta or 'SPV' toll highway was laid in November 2011 in Romano d'Ezzelino, and in 2012 work began on the first stretch of the 2.6 billion euro road.

Constructing the highway presented a number of engineering challenges, including bridging the Poscola, Astico, Laverda, Muson and Brenta rivers — the latter requiring a bridge of 430 meters in

length alone. The highway also features two natural tunnels and 33 artificial tunnels, the longest of which runs to six kilometers. Now completed, the SPV's 162 kilometers link Vicenza and Treviso, interconnect with three national motorways and deliver greater mobility for the area's 4.9 million inhabitants and the 500,000 businesses that call the region home.

Given the amount of traffic the road is expected to carry, it is vital that SPV's operators keep the highway moving smoothly and safely and that they have access to data on traffic volumes and average speeds. To do so, they are relying on an AI-powered video surveillance system from Hanwha Techwin and its technol-

Two natural and 33 artificial tunnels are constantly monitored, and the images analyzed by Sprinx software for breakdowns, fire and smoke, objects or people on the road, and collisions



ogy partner, Sprinx. Italian distributor Sirius-Compass and systems integrators SIS scpa and Pagano Spa worked together to install 600 cameras along the route of the SPV, calling on the manufacturer's high-resolution Wisenet cameras with day/night ICR technology and a wide dynamic range to deliver high-quality images regardless of light levels. The installation also includes 32x zoom PTZ dome cameras, all managed through a Wisenet Wave video management system.

Easing Congestion and Early Incident Detection

The cameras are integrated with analytics expert Sprinx's 'traffix.ai' solution, which uses deep learning and image processing to deliver a wide range of server-based analytic functions that increase safety for road users and provide greater insight into how the highway is being used.

These functions include automatically detecting traffic incidents in real time and immediately alerting the highway's operators to initiate an emergency response. Whether it is a stalled vehicle in one of the highway's lanes, or a car travelling the wrong way down the highway, the system can reliably detect events that could cause traffic congestion at best, and serious accidents at worst. The solution can also spot and alert operators to smoke in any of the highway's many tunnels, which might indicate a traffic incident or a fire.

Using the cameras as a traffic sensor, the software is also able to detect queues of traffic and objects in the road, such as cargo dropped by vehicles en route and which presents a hazard for oncoming traffic. Added safety is also ensured by the system's ability to alert operators to any pedestrians who have strayed onto the highway.

Delivering Insights Into Road Use

Deploying AI in the system delivers additional benefits for the SPV beyond safety alone. Using traffic analytics, the system installed along the length of the highway keeps track of vehicles moving in any of the Wisenet cameras' field of view, and is able to collect data on the highway's two lanes at the same time and in both directions of travel. The traffic data that can be recorded and stored as a result provide a rich source of insight into how and when the highway is being used and by what types of vehicles. The system enables operators to undertake vehicle counting, measure traffic density and ascertain the average speed of vehicles along the route. Fully integrated with the Wisenet Wave video management system, all this information is delivered via an intuitive web user interface.

"Together, Hanwha Techwin and Sprinx make the Pedemontana Veneta highway safer for road users and help keep traffic flowing," says Gerando Capezzuto of SIS scpa. "Using the combination of Sprinx's AI video analytics and the Wisenet Wave VMS platform of Hanwha Techwin, we are able to instantly detect incidents along hundreds of kilometers of road to provide a faster response, while the insights it has provided into how the highway is being used are proving invaluable in maximizing the efficient use of the road."

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SAFE CITY

A Complete Overview

How Video is a Key Component to Keeping Our Cities Safe

As societies across the world grow, so do our cities, and with them the inevitable security risks. It's no secret that cities are inherently challenging to comprehensively secure. Being that they are made up of many different spaces – parks, buildings, streets – and numerous stakeholders, such as public, private and government entities, cities present a complicated environment that requires innovative security strategies. There is a staggering number of considerations when trying to provide a secure environment for everyone.

Though each individual component of a city possesses unique characteristics, the key to enhancing safety for citizens and assets starts with building an infrastructure that enables law enforcement to be able to easily view video from a large number of sources. How can this be achieved? Through the use of cutting-edge video surveillance.

360-degree Cameras: Simultaneously See the Entire Scene While Focussing in on Areas of Interest

First of all, for cities to be truly safe surveillance needs to be able to provide complete situational awareness, this means all angles, all areas and no blind spots! The most successful way to achieve this with today's technology is through leveraging both 180 and 360-degree cameras coupled with powerful video management and advanced analytics to create a comprehensive solution.

Video cameras that leverage 180 and 360-degree technology and innovative dewarping (to create more natural looking views) in both live and retrospective video feeds can allow cities to:

- **Minimize risk:** With threats such as vandalism, theft, violent crimes and terrorism plaguing cities today, surveillance cameras can be used to both deter and detect events in all captured areas, as well as enable security officials to view footage live and retrospectively to track or locate a suspect.
- **Cover more ground:** Between groups of people, clusters of traffic and tightly spaced buildings, any type of surveillance system in a city is naturally put to the test when it comes to obtaining extensive coverage. Unlike PTZ cameras, which only capture specific parts of a scene, 360-degree cameras can pick up activity across expansive areas without blind spots.
- **Improve response:** When a security incident presents serious risk and danger to those nearby, officials must be able to quickly access the entire situation. 360-degree technology enables personnel to make fast but informed decisions by allowing them to simultaneously see the entire scene while also being able to focus in on areas of interest. And when combined with advanced analytics and artificial intelligence solutions, this reaction can become proactive, as this technology creates the opportunity to identify abnormal behavior or suspicious individuals.



The OnCam C-Series for indoor and outdoor surveillance is a 360-degree fisheye camera

- **Develop partnerships:** As mentioned above, the assorted agencies that play a role in municipality security and overall success must be able to work together. Video footage from surveillance cameras can be combined with additional data points in a single interface, creating the basis for a strong and cohesive relationship between all involved.

Compression Technology Saves Bandwidth Usage

But in order to provide the very best surveillance, security cameras need to leverage powerful SoCs (Systems on a Chip) to power advanced technologies. 360-degree cameras that provide high resolution images, seamless dewarping capabilities, the ability to generate multiple views at once and excellent light management have a much better chance of capturing criminal activities. Of course, combining all these capabilities can cause an increase in bandwidth and data storage, increasing costs on already cash-strapped cities. But by investing in cameras which combine the very best in surveillance technology with state-of-the-art compression technology, bandwidth usage can be significantly reduced (by an average of 50% or more) keeping storage costs under control. This means that having highly efficient cameras across cities to maximize the safety of citizens and infrastructure doesn't need to cost the earth.

Cities are Moving Beyond Basic Surveillance

Of course, video surveillance cameras are only part of the story, in order to create a truly smart and safe city then they must be part of a much wider ecosystem. Global digital transformation is accelerating at an unprecedented rate and is allowing cities to deploy technology in ways never seen before. By bringing together



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the capabilities of IoT devices, analytics, 5G and AI the gap between private and public entities is closing, consolidating data and information from across cities, to create almost instantaneous actionable insights on a staggeringly large scale. Cities are moving beyond basic surveillance of individual siloed spaces – they are becoming truly connected, they are becoming smart and safe.

It's not just Oncam that are seeing the growth of smarter cities as a positive thing, their SoC partner Qualcomm Technologies is also excited to be leading the charge with their Connected Intelligent Edge vision and Qualcomm Smart Cities Accelerator Program.

“At Qualcomm Technologies, we are leading the realization of the Connected Intelligent Edge, enabling powerful and efficient IoT devices that can transform cities and spaces from smarter infrastructure and utilities to safer transportation and connected emergency services. We've collaborated with Oncam on their C-Series camera portfolio which targets security and safety applications. The C-Series is powered by the Qualcomm Vision Intelligence Platform – a platform capable of offering powerful image processing to drive more intelligent connected cameras,” said Jerome Jacqmin, Senior Director, Product Marketing, Qualcomm Communications S.A.R.L.

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Fixed Mini Domes with Deep Learning

Axis Communications has launched three, cost-efficient mini domes offering great image quality even in challenging light conditions. Compact and discreet in design, they support advanced analytics based on deep learning at the edge. The M3085-V, M3086-V, AXIS M3088-V (later in 2022) deliver great image quality in 2MP, 4MP, and 8MP, respectively. Thanks to their wide dynamic range, they ensure clarity even when there are both dark and light areas in the scene. The M3085-V and M3086-V include the company's Lightfinder for sharp, color images even in low light. Axis Object Analytics comes preinstalled and knows what to detect so it is possible to focus on objects of interest - all tailored to specific needs. In addition, with support for ACAP, it is possible to add value to the system with tailor-made applications.

www.axis.com



Dahua IP Products Attain ETSI EN 303645 Cybersecurity Standard

Dahua Technology, a world-leading video-centric smart IoT solution and service provider, proudly announces that its network camera and video recorder products have attained the ETSI EN 303645 standard. As the most recognized standard that ensures the protection of consumer IoT devices against common cybersecurity threats, compliance with this standard fully demonstrates Dahua's comprehensive product design, cybersecurity, and data protection capabilities. The technical standard covers security requirements in 14 areas, including minimum attack surface, secure communications, and personal data protection, establishing a security baseline for Internet-connected consumer devices, and reducing the risk of personal data breach while helping devices to better comply with GDPR. Dahua has established auditing and certification cooperation with a number of international security institutions, including the British Standards Institution (BSI), TÜV Rheinland, Intertek EWA-Canada as well as many others. So far, Dahua's capabilities in product security and corporate cybersecurity management have been confirmed by meeting several global standards such as ISO/IEC 27001, ISO/IEC 27701, FIPS 140-2, and ETSI TS 103645.

www.dahuasecurity.com



VIDEO SURVEILLANCE

Fast Forward a Year

i-PRO EMEA Makes Its Way to the Forefront of AI-Driven Camera Systems

Last year in October we saw the formal start of i-PRO EMEA, headquartered in Amsterdam. A lot has happened since then and the company has succeeded in creating brand awareness while taking on the legacy of the Panasonic security and IMV business. We had the opportunity to talk to Gerard Figols, President of i-PRO EMEA, about the first year of i-PRO EMEA, AI in the security field, challenges in the market and the future ahead.

GIT SECURITY: Can you give us an update on the development of i-PRO EMEA during your first year? How do you see the company fit in the overall industry landscape?

Gerard Figols: The last 12 months have been very intense but extremely positive with a huge amount of activity in our newly established company. We have doubled in size, with a significant recruitment program across Europe; we have introduced 100 new products; we have doubled the models available within one month of lead time through our quick delivery service, and much more.

From my perspective, i-PRO is undertaking all the right activities to establish itself as an important player in the security industry based on our two key pillars: having an open policy and time-based competition. Both of these attributes are really valued by our partners and the market. In today's current uncertain times, particularly surrounding availability, we keep expanding our portfolio, bringing the latest innovations in AI to the market, and we are maintaining our strong position around ensuring the availability of goods.

In addition, we see the market trending towards recognising the importance of



Gerard Figols,
President of i-PRO EMEA

cyber protected surveillance systems and NDAA compliance more and more. We at i-PRO strongly emphasize on providing a fully cyber-secure and NDAA compliant line-up to give customers peace of mind and act as their trusted next generation partner. For that we are embedding world leading encryption certificates into our hardware in order to provide the maximum security and protection.

What have you achieved in the first year and what are the challenges in the near future?

Gerard Figols: We have been able to position the new i-PRO brand in the industry and new i-PRO products in the market. As well as this we have sustained the confidence of our long-term partners and gained the confidence of new partners, who have approached us thanks to our open policy, proving that the key pillars of our strategy are being well received by the market.

There are many uncertainties in the market today for any kind of business (not just in security) related to the availability of components and goods, disruptions in the supply chain and logistics, material cost increases and soaring global inflation.

At i-PRO we will continue to work closely with our partners globally to minimise any impact to them and their business.

At the start, it was your goal to deliver the right products, at the right time and at the right price. Implementing a shorter development cycle for the latest technology available in the market was another task. Can you give us some examples where you achieved this?

Gerard Figols: I believe the launch of the new Multi-Sensor line up is a clear example of this. We have recently introduced 16 different Multi-Sensor models with different variations, bringing an open AI deep learning platform at the edge. The newly launched i-PRO Multi-Sensor Cameras are the thinnest and most advanced products available in the market, moreover they are the same price as the previous models, which had far fewer features and lower performance. Before i-PRO was established the overall timing from product planning to launch was around 22 months. With the new Multi-Sensor Cameras, we have dropped this to 12 months. This time reduction allowed us to bring the latest technology to the market, leading by innovation and putting in place the basis of our time-based competition strategy.

In our last interview you described the AI-ification of your security cameras. Can you give us an overview about the AI capabilities of your camera range?

Gerard Figols: When we talked last year in September, we had just 14 cameras with AI capabilities, while today we have 102 models with a deep learning AI on the edge, and

we'll keep on expanding this trend over the upcoming months and years. Having many cameras with an Open AI platform to fit different needs is very important, but what really matters is the ability to be accurate in the classification of objects and gather all the meta data required. Key to this accuracy is the number of attributes provided for segmentation. i-PRO AI-capable cameras have 13 main attributes (gender, age, hair colour, etc) and over 80 attribute items to be able to properly classify the data and deliver traceability of searched persons or objects.

i-PRO is the camera manufacturer with the highest number of attribute items on the edge in the market, and in addition we are the only manufacturer that delivers up to 8 directions of movement, which enables proper follow-up for searches.

Last but not least, as privacy is very important in Europe, i-PRO is the only camera manufacturer that has pixelation on the edge. This means we are able to pixelate the full body or just the face, and we are able to properly monitor at the same time as we provide the right degree of privacy to each individual.

All of the above are examples of the continuous evolution of our product strategy, and i-PRO is committed to developing the AI capabilities in our camera range to keep leading by innovation.

How does the introduction of i-PRO Active Guard fit into the AI strategy?

Gerard Figols: i-PRO Active Guard is a key pillar of i-PRO's AI strategy. We see i-PRO Active Guard as a game changer because it allows you to process all the AI data in real time, which means that operators can

take decisions extremely quickly and be more proactive.

To make i-PRO Active Guard easily available i-PRO has integrated it with the two major VMS players, Genetec and Milestone, and the plug-in is available free of charge, making it accessible to everyone at no extra cost. Thanks to this, many new partners are approaching i-PRO wanting to know more about our products and technology. Additionally, i-PRO Active Guard is a clear example of i-PRO's newly implemented open policy.

Having the right products is the basis for a successful business, but the best products are not enough if they are not available fast enough. Can you comment about your ability to deliver your products in a timely manner?

Gerard Figols: I completely agree and that's why i-PRO is implementing a time-based competition strategy and aims to have operational excellence to support our customers globally. i-PRO has most of its products available under our quick delivery service, which helps our partners receive their products in maximum two to four weeks. However, our aim is to provide next day delivery to the system integrators that are working with i-PRO. And for that we are working closely with our premium distributors pursuing the same goal: to provide the best products in the shortest timeframe possible to achieve operational excellence which will bring benefits to all the industry stakeholders.

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People, Pitch Invasions, Pyrotechnics

Video Technology Helps Against Staff Shortages, Improving Crowd Management in Stadiums



Increasing staff shortages and regulatory requirements are causing headaches for organizers of many events such as concerts, festivals or football matches. With the use of the right video technology, however, stadium operators can effectively manage their crowds, reduce fines and increase the safety of fans, players and staff.

The relief after the forced Covid-19 infused abstinence was very welcome. Over the last few months, football fans worldwide have been allowed to watch football matches live in stadiums again, and to cheer on their favorite team without significant pandemic restrictions, such as a limited number of seats and social distancing in the stadiums. However, the excessive emotion this brings with it highlights almost forgotten challenges, such as fans storming the pitch during or after a match, the ignition of detonators and pyrotechnics or the unfortunate notorious racist insults.

Stormy Young Males and the Lack of Stewards

Many stadium operators observe that it is often young male adults who are just 18 years old or slightly older who, besides their 'normal' rowdy adolescent boisterousness, engage in offensive or even criminal behaviour. The pandemic restrictions have certainly added to the issues as this demographic group have not had the opportunity to let off steam by going out to bars and clubs. Now they are adults, possibly under

the influence of alcohol or drugs, they get carried away by the atmosphere of the crowd in the stadium and do foolish things.

Another problem is the lack of stewards. The situation is similar in all European countries: in the UK, quite a few returned to their homes abroad during the lockdown measures of the pandemic or have simply looked for other jobs. Those who are deployed in the regular staff's absence are often only partly experienced or not sufficiently trained.

Pitch Invasions: A Very Tight Time Window

Such circumstances favor one of the biggest problems of crowd management, namely pitch invasions. From single 'streakers' to hundreds or potentially even thousands of fans storming the pitch — a nightmare for every stadium operator, who has almost no chance of keeping an overview of the situation and ensuring the safety of everyone present. However, experience shows that most pitch invasions have the same common signs: fans leaving their seats and forming a crowd at the front of the stands before one person makes the start

by storming the pitch, with the rest following them.

In addition to some approaches, such as 'licensed standing' where clubs erect railings between each row of spectators to counteract a simple rush to the front, it is also video technology that can have a preventive effect. High-resolution camera systems, equipped with several sensors of different focal lengths (so-called multifocal-sensor systems), deliver a comprehensive overview of the entire event as well as any number of simultaneous zooms by several operators. In this way, the behaviour of crowds and individual groups of spectators can be precisely observed. This gives the security staff and police in the control room a better understanding of the security situation and enables them to order stewards to specific tiers in a very informed and targeted way so that they can take further steps to calm the situation.

The same applies to tumults at the entrance areas when, for example, fans without valid tickets try to gain access to the stadium. Here too, multifocal-sensor systems cover long distances and large areas with considerably fewer screens and



People lighting flares can be identified by using the right video technology



Multifocal sensor cameras, such as Dallmeier's Panomera systems, help stadium operators to observe large spaces and improve their crowd management

help a great deal to improve situational awareness and keep things under control. The key factor is that these systems allow operators and police to understand the overall scene while at the same time being able to check for details in as many areas as needed. They are able to identify and fight trouble at the very point of its origin.

Pyrotechnics and Throwing Objects – Playing with Fire

Another challenge is igniting and throwing pyrotechnics. Equally dangerous is detonating explosives or fireworks, which can cause injuries to people's hearing or even creating a mass panic. Throwing objects, such as coins or lighters, is also a common threat. In this case, camera systems are particularly suitable for the detection of such incidents if they cover the entire grandstand area with a sufficiently high resolution (more than 250 px/m according to IEC 62676-4) and a smooth frame rate (30 fps) to obtain recordings that can be used in court.

For effective prosecution, it is also important to be able to quickly investigate if the person is masked when igniting the pyrotechnics or is already elsewhere at the time of detonation. In such cases, stadium operators or the commanding police officer can benefit from video systems that allow large spatial contexts to be captured with as few camera perspectives and screens as possible. This helps effective research and tracking. Digital incident files can also be created by using high-performance video management and control center software, where the associated image, video, and sound recordings, as well as comments, witness statements, etc., can be collected and handed over to the law enforcement authorities. Many clubs report, especially in this context, that fines imposed by the authorities on the clubs are reduced

by tens of thousands of euros if they can prove that they are using sophisticated and proven security technology to resolve such incidents and prevent them in the future.

Terrorism and Hostile Reconnaissance

At this point, two further important applications of video technology should be mentioned where it can provide support. In terms of a duty to protect, it is important to use video systems that function smoothly and are up to date, but it is also important to ensure that a video system does not create blind spots that attackers can use to retreat into or entrench themselves without being seen, as was the case in the terrorist attack in Manchester on 22 May 2017. Here it can be useful to rely on 360° or 180° cameras that give an overview of even the most convoluted areas to ensure a complete view of events.

It is equally important to have an immediate overview of other security systems, such as access control, intrusion detection and fire alarm systems. Imminent dangers, for example if a locked door is opened violently, can be reported by the access control system to a higher-level control center software. By intelligently linking the locations of doors and the associated viewing angles from installed video cameras, these systems can issue alarms and operators can immediately verify such alarms with video images and take further action. For example, it is possible to unlock all doors during evacuation measures, to remotely control bollards and to visually verify procedures.

AI vs. Roof Climbers and Other Threats

Besides the challenges on match days, safety is also important when conferences,

corporate or other events take place. One trend is so-called 'urban climbing' where adventurous people climb stadium roofs, for example, to take selfies and pictures for social media. In these sterile areas, the interaction of video cameras and AI-based object classification software can help to issue an intrusion detection alarm if the system detects a person in this forbidden zone. Security forces can intervene accordingly and resolve the situation.

Camera systems, such as Dallmeier's patented Panomera multifocal sensor systems, already offer numerous options of how they can meaningfully support crowd management through high-resolution recordings of large spaces. Stadium operators already benefit from sophisticated building and control center systems to control all the security systems via a uniform and intuitive user interface in alert situations. Due to the rapid development of AI-based video analysis, there will be numerous applications in the future that can improve crowd management. These include, for example, the tracking and automatic search of people based on certain characteristics such as the color of their clothing, the tracking of individuals throughout the entire stadium, and predictive analysis of tricky situations before they occur.

Regardless of future capabilities, high-quality camera images will always be at the core of any analytics solution – image quality determines data quality and, in most applications, the human eye is needed to make the final decision.

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VIDEO SURVEILLANCE

Street Lighting Cleverly Used...

...to Supply Energy for Video Surveillance Systems

Epvideo from Slat provides a reliable power supply for video surveillance systems and their uninterrupted operation around the clock. The solution, which has already been used successfully in France for twelve years, now secures more than 15,000 surveillance projects at hazardous locations and traffic junctions, in car parks and logistics platforms. Now the successful product is also coming to Germany.

The Epvideo outdoor cabinet is installed on a street lighting pole. The Li-Ion battery inside charges up at night when the lights are on. The stored energy is then used to power cameras and other networked IP objects during the day, with an autonomy of up to 21 hours. With its integrated UPS function, the system also ensures uninterrupted operation of the connected systems around the clock in the event of disturbances to or the failure of the mains supply.

The high efficiency factor allows reliable planning of the security system for years to come. This is because around 1800 complete charge/discharge cycles can be carried out with an energy efficiency of over 96 % in the discharge cycle and a maintenance-free functional time of up to ten years.

Installation is simple and can be done by one person in less than 30 minutes. Afterwards, activation is automatic via remote control. The operation of the system is monitored remotely via Internet protocol (TCP/IP, SNMP). In case of an interruption of a recording camera (e. g. a frozen camera), an automatic restart is triggered after 8 seconds.

To support the customer's project planning in the best possible way, Slat issues a so-called associativity report. For this purpose, all devices connected to Epvideo (e. g. cameras, routers, switches, Wi-Fi systems) are checked for compatibility using an in-house developed configurator. Only in this way can the entire system function reliably. The report also documents information about performance and autonomy at different temperatures as well as the specific day length in the summer and winter months depending on the location. The solution has grown over many years of experience and has the advantage of being able to be quickly installed and removed, and without and civil engineering work being necessary.

Case Study

An interesting case study is the e-valley in Cambrai, northern France, where a gigantic logistics platform for e-commerce, the e-valley, is currently being built on the site of the former Cambrai airbase. With 550,000 m² of space for warehouses, up to 85,000 m²

of service areas (restaurants, hotels, nursery, and a training center) and 300,000 m² of land reserves, it is to become Europe's largest logistics center. And not only in terms of floor space.

A campus equipped with intelligent technologies is planned: robots and drones in and around the warehouses (Logistics 3.0) as well as an infrastructure controlled according to smart city criteria.

It is not difficult to understand that in a project of this magnitude, which is based on critical applications, security is the top priority. This applies first and foremost to the maximum protection of the site's main traffic axis. The contract was awarded to the planner and installer Eryma from among a number of bidders. The company had submitted an Epvideo-supported security concept.

Many Ports

Seven such systems, each with installations adapted to the requirements of the surveillance masts, have so far been installed on the central main traffic axis. They supply three camera configuration types, each with a six-port Ethernet switch including two SFP ports: three Q1941-E thermal network cameras, a P1455-LE bullet camera with PoE injector, and a Q6125-LE network camera with PoE injector.

The overall solution, which is easy to install and maintain, durable and cost-efficient, can be conveniently monitored via remote control and is 100 % fail-safe. And last but not least, the selection decision was supported by the track record of the large number of Epvideo devices already installed and proven in safety technology installations in France.

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Epvideo from Slat with Q1941-E thermal network camera



Ajax Introduces OS Malevich 2.13.1 Update

The OS Malevich 2.13.1 update brings a possibility to create keypad access codes for users that have no account in an Ajax security system. From now on, users don't need to register an account for office workers, cleaning personnel, or real estate agents to enable them to manage security with Ajax keypads: they just assign a separate access code in the hub settings. In addition, users can create a duress code and manage access to certain areas of a secured facility as well as activate Night mode, if the group mode is enabled for an Ajax hub. The servicing personnel will have access only to the rooms with equipment that requires maintenance. Users can assign a name and ID to the access code for Ajax keypads. A servicing or management company can use unique IDs to grant its employees or contractors access to multiple hubs and track their activities at different objects. Event logs and notifications in the PRO Desktop app display the name of the person/company as specified in the settings and an ID if Translator or third-party monitoring station software is used. A person can have the same access code, name, and ID for any number of hubs. This way, the support engineer will be able to use the same 4–6 digit passcode for tens of objects. In addition, OS Malevich 2.13.1 improves the Photo by Scenario function. This update allows Motion-Cam PhOD detectors to take photos both in case of fire detector alarms and when any security devices within the system (opening detectors, panic buttons, integrated wired devices, etc.) are triggered. <https://ajax.systems/>

Dragonfruit Frontier Provides Cost-Effective LPR Solution

Dragonfruit has released a new video security solution. Frontier, the new fully integrated VMS and video analytics solution, delivers a software-only License Plate Recognition (LPR) solution that employs advanced AI technology vs. traditional image processing. Unlike conventional LPR analytics, Dragonfruit Frontier works with virtually any surveillance camera, eliminating the need for custom hardware and complex installations, which greatly reduces costs. Designed for fast and accurate identification, Dragonfruit Frontier's advanced LPR analytics automatically detects and logs license plate numbers with the ability to categorize license plates by region and type to quickly narrow down vehicles of interest. Comprehensive reports provide details on the occurrence of license plates of interest within the platform's browser-based UI. Dragonfruit Frontier can also generate exportable reports in CSV format for ease of investigation and integration into other systems and processes. www.dragonfruit.ai

Uniview: ColorHunter+ Dual Lens

Uniview has released a 4MP wide-view ColorHunter camera to bring users a complete, clear, and vivid image. Based on Uniview's fusion algorithm of image stitching, the ColorHunter+ camera has achieved a 32:9 ultra-wide field of view of images, a full record of the movement of the track, and no effect of the image distortion. Therefore, it has a wider field of view. The ColorHunter+ camera provides full-color and high-quality images. On the one hand, the use of dual F1.0 large apertures, they make sure more light gets in. When in a low-light environment, they can still effectively restore color information. On the other hand, the use of comfortable dual warm lights design which is soft and uniform, can still capture color details in the dark environment, and it makes the night seem like the day. <https://global.uniview.com>

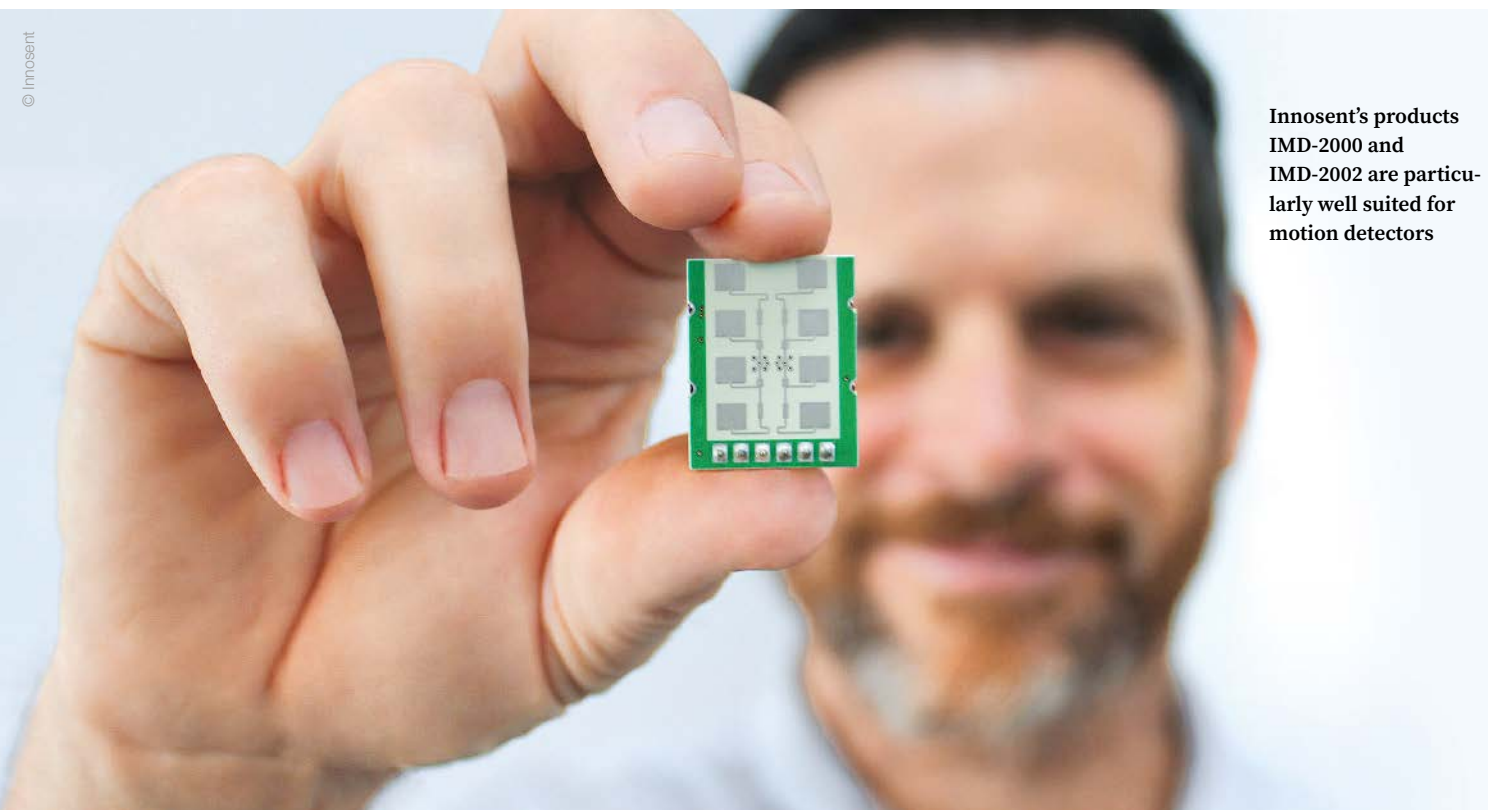
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MESSE
ESSEN



Innosent's products IMD-2000 and IMD-2002 are particularly well suited for motion detectors

RADAR

Motion Detection on Demand

Efficient Detection of Movements Through Radar Technology

Security equipment must hold its own in a wide variety of locations. Beyond monitoring private property and houses, the technology is also used to protect large areas, complex buildings, or borders. Security monitoring products therefore face requirements that may vary depending on local conditions. Generally, no two buildings and properties are alike.

The better the monitoring is adapted to conditions on site, the more reliable and efficient it is, because concentrating on one relevant security area helps reduce false alarms. This even applies to simple security needs such as motion detectors. The more focused the detection areas are and the more information available to users about the event in order to assess its relevance, the better the area can be effectively monitored.

False Alarm Triggering and High Costs: PIR or Radar

Motion detectors are widely used. The sensors detect movements of objects or people in their field of view. They automatically transmit this information in the form

of a signal to immediately trigger alarm functions, for example. This task can be managed even using low-cost technologies such as PIR. However, if the user needs more data about the motion event, that's where radar comes into play.

This measurement technology not only detects movements, but also collects further information such as speed and direction of movement. And this additional knowledge about objects and people helps with better assessing the security risk. What's more, the information can be used to enable additional functions to further boost the precision of security surveillance.

But radar's greater potential functions are also reflected in its price. Security equipment manufacturers used to have the

choice between expensive, advanced radar or low-cost, simple PIR products. Reliability and efficiency are particularly important when it comes to alarm and surveillance systems. Erroneous triggering caused by passers-by or wind movements aren't welcome – nor are expensive prices. This presents a dilemma in the field of security technology. The consequence: low-cost PIR motion detectors need to achieve more, or high-priced radar products need to become more affordable.

Radars More Affordable Due to Chip and Components Development

Advances in chip technology, electronic components, signal processing, and software are having a positive impact on

the pricing of radar sensors. Radar-based motion detectors are becoming more affordable and featuring greater customisation options. More and more products with attractive prices, smaller and smaller antennas, user-friendly configuration, and easy integration are conquering the market.

Radar's improving price factor combined with its impressive functionality makes it indispensable in the security sector. And the technology is also in demand for simple motion detection use cases in the low-cost segment. After all, radar has just the right features to enable custom-tailored motion detection.

What are the Advantages of Radar for Motion Detection?

To put it simply: the more data available about the events and the environment, the more systematically adjustments can be made. And the more configuration options there are to make surveillance more efficient.

The detection range can be defined with precision. And the detection areas are individually adapted to the situation on site. By limiting the range, users can, for example, ignore adjacent properties, roads, or paths that are not relevant to surveillance. This reduces the risk of false alarms triggered by movements outside the zone to be monitored.

Thanks to the extensive detection information radar technology provides, it also allows alarm zones to be defined that trigger a function. The radar doesn't transmit the alarm signal until an object or person is within a specified distance from the sensor or a defined area.

Advanced radar solutions also boast extensive filtering options. The measurement result can be determined more precisely using the parameters and can be cleaned up by removing certain detections. This may include wind and rain filters, for example, which ignore movements caused by the wind or detections of raindrops. Custom configurations are also possible. Among other things, users can filter out small animals based on the RCS value if required.

Determine Speed, Direction of Movement, and Distance

Innosent's radar experts recognised the potential the technology presented for the security market and the industry's needs early on. The company thus developed a new product series that offers added value for motion detection. State-of-the-art product design enables attractive pricing and paves the way for radar technology to enter the low-cost market.

Innosent's products IMD-2000 and IMD-2002 are particularly well suited for motion detectors in the area of security. Their functions and properties are a perfect choice for alarm systems, light automation, and near-range surveillance.

Both sensors operate in the 24GHz frequency band and utilise FSK radar modulation for detection. This allows you to determine the speed, direction of movement, and distance of moving objects. The included signal processing helps reduce the development effort required to use the end product. This means the products can be integrated and commissioned without in-depth radar knowledge.

In contrast to the IMD-2000, the IMD-2002 enables angle measurement to be performed. The two products are also very distinct in terms of their range and coverage area.

No False Alarms by Animals Roaming Around

A typical application for the IMD-2000 is conventional alarm systems. The radar sensor outputs the processed and transmitted signals in the form of a target list. This data regarding detected movements can be used to activate downstream electronics. The right programming enables typical alarm functions such as a notification about a security risk, activation of a video camera, an audible signal or light to deter intruders, or other security measures.

The additional distance information is used primarily to better define the area to be monitored. The distance information can be used to filter out objects or persons. By configuring the range, users can delimit areas such as the neighbouring property. Movements on the road by passing vehicles, passers-by on the pavement, or in further-away areas with animals roaming around aren't a problem either. None of these factors have a negative impact on the reliability of security surveillance, because they don't trigger any false detection.

Positioning Object Through Combination of Angle and Distance Determination

Motion detection is even more efficient when it takes into account distance information and angle measurement. Based on the additional data received, the detection results can be filtered using a further parameter. This enables the measurement to be adapted even more precisely to the application requirements.

The combination of angle and distance determination enables the object to be positioned. The IMD-2002 is thus predestined for area and perimeter surveillance. The

sensor is sometimes just one component among many other security technologies, such as PIR or camera, all integrated into a complex surveillance system. All the information provided is gathered there in order to obtain the most comprehensive picture possible of the events. The radar also performs various tasks in area monitoring, such as starting the camera or switching on the lighting system.

Tracking: A Next Step in the Field of Security Technology

Since radar is considered to be independent of weather and lighting conditions as well as maintenance-free, users benefit from the equipment's robustness, no matter which product they choose. If another technology should fail, users can rely on the extensive data provided by the IMD-2000 or IMD-2002.

For example, if fog makes it impossible to recognise anything in the image transmitted by a camera, the radar data continues to ensure reliable security surveillance. Another advantage for performance is the detection of attempts to tamper with the system. Both products detect if there's an object in front of the antenna blocking the signal.

And the potential of their functionality and adaptation is far from exhausted. This is because integrators also have the option of further developing signal processing using the additional measuring parameters. A next step in the field of security technology would be tracking. Once the necessary development work is done, this feature enables the movement history of an object or person to be recorded.

Motion Detection for a More Targeted Monitoring

Both products take motion detection to the next level. Individualised security surveillance is a step forward for the security industry. The filter options boost the efficiency of the security technology, because the additional information and configurations enable more targeted monitoring. This significantly lowers the risk of false alarms. Custom motion detection improves the performance of security systems.

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VIDEO SURVEILLANCE

Timely Reaction

**Streamlining Event Response:
The Alert-to-Action Security
Solution for Factories and
Manufacturing Plants**

The Covid-19 pandemic will leave behind a changed economic landscape for companies and manufacturers in every industry, including critical manufacturing sectors. Staying focused on protecting supply chains, keeping production at full capacity to meet demand, and adapting to transformations in technology, trends towards automation, and new operation methods is crucial for the future. Eizo's IP video decoding solutions can integrate security, video analytics, and access control systems to provide an alert when things stop running smoothly.

An optimally running facility depends on factory staff, floor supervisors, and security personnel having critical information with immediacy to prevent disruptions in production and to keep employees and assets safe throughout day-to-day operations. For factories and manufacturing facilities, keeping production schedules on track is crucial not only for the success of the business, but also for the contribution to the greater economy afforded by the goods and materials produced. Loss of production time adversely affects factory output and, for some industries, disruptions could lead to even further impact on essential functions and availability of supplies to the populace. Video monitoring can be used as a measure to protect the production process in ways such as tracking inventory levels, following arrivals and shipments in real time, and visually supervising overall operations and the production floor. With trends towards automation and the conscious efforts to minimize close contact between staff on-site, keeping eyes on critical areas at all times presents factories and manufacturing facilities with chal-

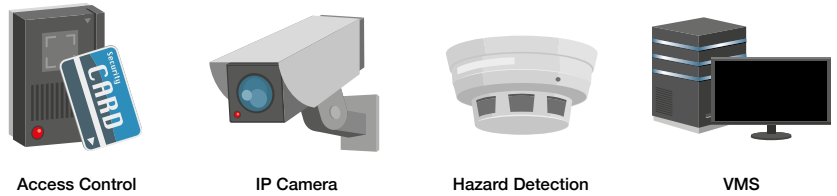
lenges that necessitate real-time notifications.

Eizo's IP video decoding solutions support customizable integration with security, video analytics, and access control systems with the Alert-to-Action function. This means that the monitor or IP decoding box itself can serve as a two-way communication device and provide alert notifications directly to factory staff or floor supervisors in response to specific events. For example, IP cameras and video analytics or certain machine vision cameras can detect abnormal conditions on the production line, machinery malfunctions or overheating, or monitor the flow of people and product throughout the plant and send an alert. The monitor or IP box solution can be programmed to automatically adjust the monitor's layout, enlarge the screen, or apply visual indicators, such as a text message or frame to actively notify staff when it receives an alert.

A command can also be sent from the IP monitor or decoding box to a signal light on the production floor to quickly draw the attention of on-site staff to a specific location for assessment. This helps manu-

Security Systems

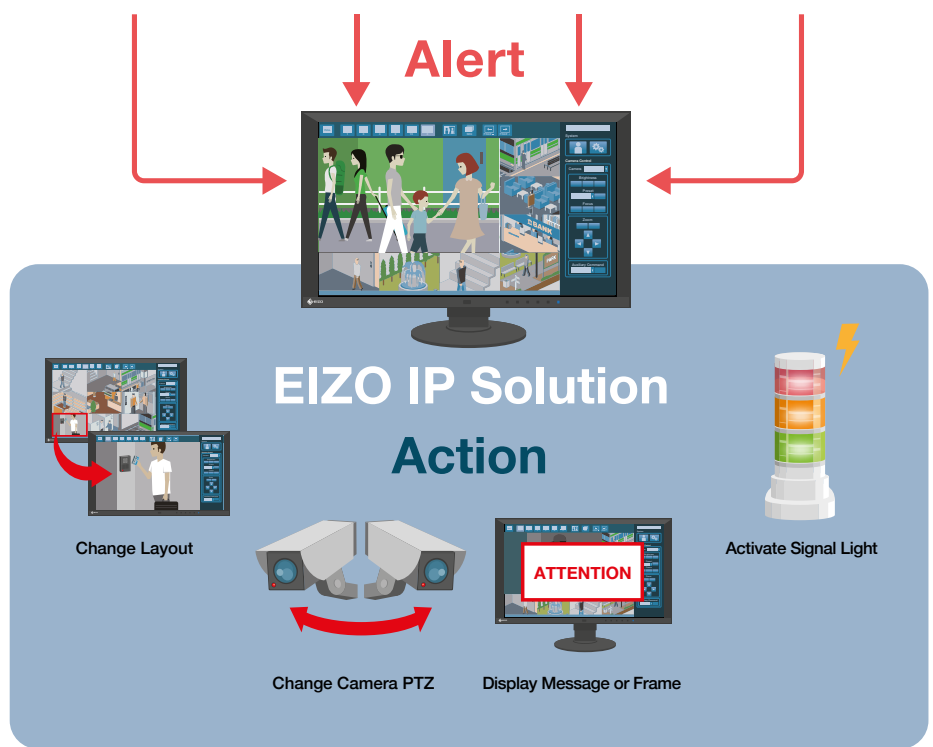
Problems detected by various different systems can raise an alert and automatically initiate corresponding actions ▶



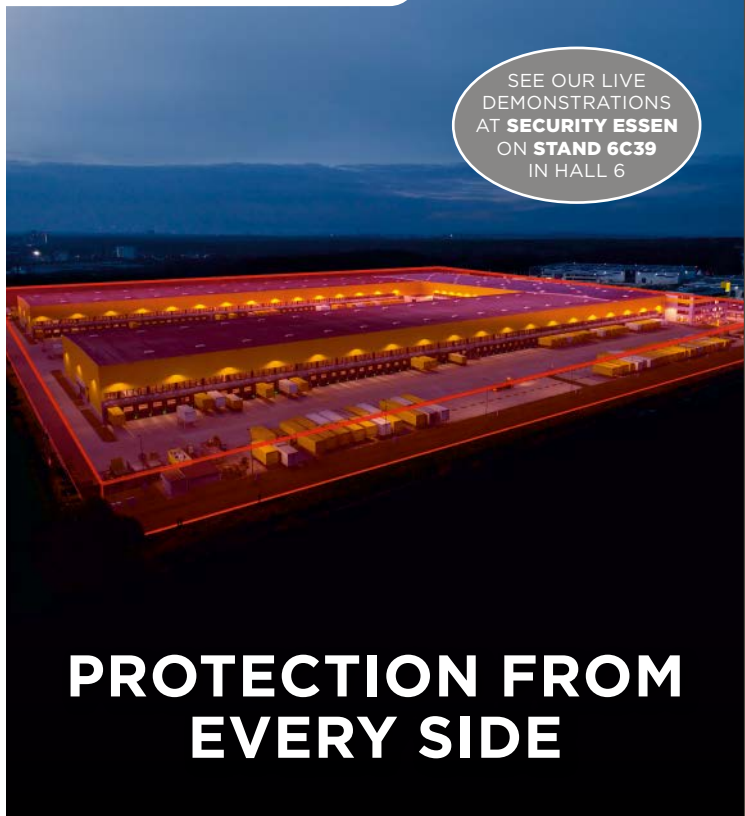
facturing supervisors stay informed when there is an issue and take the necessary actions to resolve it before production is heavily disrupted or halted completely. Furthermore, factories that employ 'lights-out manufacturing' – in other words factories that are fully automated and require little to no human intervention – can take advantage of an integrated alert system with Eizo's solution, so if there is a malfunction or outage, off-site personnel can be notified to immediately take action.

Mitigate Risks and Workplace Hazards

High-risk machinery, hazardous material handling, towing vehicles, and other high-risk mechanisms may contribute to accidents in the workplace. Securing the environment to keep employees safe and protected is of the utmost priority. Among the most common accidents in these settings are falls or contact with objects or equipment that result in injury. Workplace accidents also directly impact the produc-



SEE OUR LIVE DEMONSTRATIONS AT **SECURITY ESSEN** ON **STAND 6C39** IN HALL 6



PROTECTION FROM EVERY SIDE

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 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. Alerts can now be configured to meet specific detection criteria or logic, allowing events to be filtered to enable security teams to focus on what really matters.



www.optex-europe.com

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

tion process, which may need to be halted if an incident occurs.

When integrated with a video management system (VMS), video analytics, or other security systems, Eizo's IP decoding solutions can take a more proactive role in protecting factory employees by enabling intervention to prevent dangerous incidents and providing a quick response in the event of an accident. With Alert-to-Action, the monitor can provide visual indicators when cameras or life safety systems detect a fall, if staff enter a restricted or unsafe zone such as one with machinery or moving parts, or if machinery malfunctions or shows unsafe levels of operation. This allows operators and factory staff to quickly take action to ensure the environment remains safe and secure. Proactively mitigating workplace hazards not only keeps staff safe, but also helps to prevent disruptions in production due to downtime caused by an incident.

Protecting Equipment, Assets, and Intellectual Property

Factories and manufacturing facilities are often a target for theft due to the value of materials, equipment, and machinery stored on site. Not only physical assets, but production process methods, intellectual property, and trade secrets must also be closely safeguarded. Factory sites need to have methods to defend against intrusion in order to protect the business, to maintain production schedules, and to keep production costs down.

When integrated with the local access control system, Eizo's IP decoding solutions can take a more proactive role in protecting factory property. With the Alert-to-Action function, the IP monitor or decoding box can visually communicate if an unauthorized person enters the premises or restricted areas, such as storage areas or server rooms, if suspicious persons exhibit odd behaviour, or if equipment has been tampered with. A surveillance camera can utilize presence detection technology to send an alert to the monitor, which can automatically change its layout or add a visual indicator to the screen, notifying security personnel immediately. Furthermore, a command can also be sent from the IP monitor or decoding box to activate an audio warning through an audio security system to deter intruders before any damage is done.

For certain products and industries, such as food, drugs, chemicals, etc., it is imperative for manufacturing sites to also protect their materials from adverse environmental conditions. Systems with environmental sensors that measure temperature and humidity in an area, for example, are used to ensure that sensitive components, perishable goods, and other materials are properly quality controlled and safely stored until they can be used in production. If abnormal environmental conditions or contamination are detected, the system can send an alert to the IP monitor or box, which can then display a visual indicator for the active supervisor to act. Integrat-

ing these and other systems into the visual communication framework enables quick and reliable verification of stored material and inventory status.

The Alert-to-Action Solution

Eizo's IP decoding solution's web API supports custom integration with the local security systems and devices to allow communication with and response to alerts over the network. When an event occurs and an alert is sent from IP cameras, access control, hazard detection, VMS, or other systems, Eizo's solution responds with a preassigned action, such as layout adjustment, message display, audio activation, camera adjustment, masking, and more. Implementing an intelligent visual communication system into the workflow is a step forward in future-proofing security systems burdened with a high volume of information, so that factory staff and management can optimize day-to-day operations. Optimizing the security and surveillance system with a smart event response ensures these facilities provide a safe and efficiently-moving production or manufacturing environment for prosperous business and contribution to the economy.

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Explosion-Proof External Infra-Red Dual Beam Detector

GJD design and manufacture a wide range of external perimeter protection products that identify genuine threats and create alerts when an intruder is at the boundary, rather than inside the premises. The company's product range includes the ATEX-certified Infra-Red Beam Detector, (GS100), for hazardous areas one and two. The GS100 is intrinsically safe and provides versatile detection solutions, which allows engineers to reliably protect hazardous areas. It is designed to be used with intruder alarm and CCTV equipment. It can also be integrated with a variety of other devices, which provide a means of monitoring the voltage-free relay alarm output. Ana Maria Sagra-Smith, GJD's Sales and Marketing Director commented: "The ATEX-approved GS100 is an extremely reliable product, which is perfect for use in hazardous areas. It provides an early warning of potential intruder threats or safety breaches, providing total peace of mind to personnel on the site." One of the major advantages of the GS100 is the asynchronisation of the beam connections. This allows multiple sets of beams to be installed on the same site, or stacked above each other without 'cross interference', ultimately providing a high level of security.



www.gjd.co.uk

TDSi Unveils Latest Gardis Software Updates for Version 2.4

Version 2.4 adds additional Site Plan functionality, integration with Microsoft Active Directory, and support for Distributed Communications networks. Integrated security manufacturer TDSi has unveiled the latest version of its powerful but highly flexible and secure access control Gardis software – Version 2.4. New enhancements include an enhanced Site Plan function, integration to Microsoft Active Directory, and Distributed Communications support for full security and business systems network integration. Tina Baker, Software Project Manager at TDSi comments, "It's no secret that the Gardis software platform is built to evolve and expand over time, adding additional functionality and features which match the needs of our customers. These latest additions are in answer to feedback from our partners and customers on what security operators need in terms of integration with their buildings management systems now, as well as what will prove to be essential moving forwards."

www.tdsi.co.uk

GIT SECURITY EMEA

INNER COVER – FIRE PROTECTION



G217090



The Aviotec IP starlight 8000 fire and smoke camera from Bosch is superior to traditional smoke detectors thanks to video analysis using AI algorithms

FIRE DETECTION

Rapid Recognition by AI

Cameras for the Fastest Possible Fire Detection in Industrial Environments

Thanks to video analysis using AI algorithms, the Aviotec IP starlight 8000 fire and smoke detector camera from Bosch is superior to standard smoke detectors. As the first system of its kind to be certified with the VdS quality seal since 2018, Aviotec detects fires at an early stage and thus increases safety in industries that are particularly at risk of fire, such as paper production or recycling plants.



In recent years, new types of fire risks in industrial plants have resulted in an increased need for the earliest possible fire detection. Fires in recycling plants are increasingly making headlines. Overall, fires at recycling plants in the United States have increased by 26 percent in recent years.

In these plants, the direct proximity to flammable substances means that a fire can quickly get out of control. Fire detection is also made more difficult. Due to high ceilings in recycling warehouses or drafts through half-open areas, conventional detectors are often unable to detect smoke particles in the air in good time and sound an alarm.

Since 2018, an IP camera with intelligent video analysis from Bosch has been offering early fire detection under difficult conditions: The Aviotec IP starlight 8000 fire and smoke detector camera can detect flames and smoke even from a great distance in just a few seconds. Installed worldwide in production facilities, warehouses, terminals, hangars and tunnels, the VdS-tested system ensures the necessary safety even under conditions where conventional smoke detectors reach their limits.

Artificial Intelligence Detects Fires in Seconds

Common smoke detectors trigger an alarm when they detect a dangerous concentration of smoke particles in the room air. However, this principle proves to be too slow when smoke detectors are mounted under the ceiling in high warehouses or tunnels. Instead, Aviotec IP relies on fire detection using video images, i. e., light signals. These are faster than smoke particles; the video-based system can thus detect fires that are developing at an early stage and within a few seconds.

” *Video-based fire detection fills a gap in existing fire detection technology in large and open areas. Our goal was therefore the quick and reliable detection of fires, almost independent of the application conditions.*

Sören Wittmann, Product Manager Aviotec

To do this, the Aviotec camera uses special AI algorithms to analyze the live video images for the formation of smoke and flames. The fact that the processors for the necessary computing power for image recognition are already built into the cameras is of crucial importance here. This means that the video images do not first have to be transmitted via a network to a server for analysis but are immediately available for evaluation by the built-in intelligent video analysis.

Here, Aviotec avoids costly false alarms by precisely distinguishing between real fire and disturbances. More than 20 algorithms recognize disruptive factors such as reflections, movement of objects and backlight. The AI, specially trained for fire detection, ‘sees’ fire based on factors such as smoke density, flickering and changes in the orange and yellow color spectrum. And the system reports the exact location of the fire in the early stages and within seconds, when fires are still smoldering, and common detectors are not working.

Furthermore, Aviotec also works under conditions that overwhelm common smoke detectors. The image-based smoke and

fire detection works unhindered in high humidity or high concentrations of dust in the air, for example in the paper and pulp industry. Aviotec receives additional protection through special housings for industrial working environments.

The integrated video analysis still detects sources of fire even in weak lighting conditions down to just 2 lux. Areas without visible light can also be secured using separate infrared lighting, with the system automatically switching from day to night mode when there is a defined threshold value in the ambient light. From the operator’s point of view, the IP-based camera can also be scaled as a networked system and integrated with a central management system. In this way, fire alarms can be transmitted to a fire alarm control panel or control center and combined with systems such as voice evacuation.

VdS-Certified Safety for at-Risk Properties

The early fire detection by the video-based Aviotec system enables fire protection at a level that many branches of industry have been waiting for. Fast detection and precise



The integrated artificial intelligence in the camera (1.) recognizes emerging fires in seconds.

Installed around the world in factories, warehouses, public transport terminals, hangars and tunnels, the VdS-approved system provides protection even under operating conditions in which conventional smoke detectors would reach their limits

determination of the fire site allows rescue teams to initiate rescue and evacuation measures directly and in a targeted manner. In this way, Aviotec supports compliance with guidelines, ensures the safety of employees, buildings and machines, and avoids plant failures and production stops caused by fire.

As early as 2018, Aviotec was the first system of its kind to receive the seal of the VdS (Trust through Security) Schadenverhütung GmbH. The independent institution for corporate security found the video-based fire protection system to be safe based on the proven VdS guideline 2203, "Requirements for fire protection software" and "Specifications for testing flame detectors". Since then, the system, which has been continuously developed over the years, has proven itself in applications, such as tunnels and warehouses with high ceilings where air circulation dilutes smoke before it reaches conventional ceiling detectors, airports and hangars where traditional detection methods often trigger false alarms, semi-open rooms and outdoor storage areas that are exposed to wind and weather, and it is often precisely here that flammable substances and materials are stored.

Aviotec in Practice

Aviotec's wide range of services becomes clear in concrete application examples from industry: As an experienced provider of offset printing services, Mohn Media Mohndruck, based in Gütersloh, Germany, stores enormous amounts of paper. The fire brigade of the Bertelsmann Printing Group company needed a special fire monitoring solution for their wastepaper warehouse. Up to 300 tons of paper are stored here under eight-meter-high ceilings. Given the high storage rooms, conventional smoke detectors would

not be able to detect smoldering fires in good time. That is why the fire protection department at Mohn Media has been relying on Aviotec for years.

Fire risks are particularly high in the pulp and paper industry, where the raw materials and chemicals used in packaging are extremely flammable. The combination of overheating machines and electrical cables together with wood chips and sorted cardboard boxes is particularly combustible. Therefore, an Aviotec camera system protects employees, raw materials, machines and stored products in the corrugated board factory of the manufacturer Industria Cartonera Palmar in Machala, Ecuador. With user-specific settings and alarm criteria, the system works with minimal human intervention and ensures reliable fire protection despite difficult conditions, such as high humidity and dust.

At the Italian co-packing company Richetti in Italy, Aviotec fulfills several functions at the same time: After a serious fire in a production plant, the manufacturer of chilled and frozen snacks implemented both improved fire protection and the monitoring of critical security areas with Aviotec. Three of the special cameras secure the site: two along the production line and one in the warehouse near the boxes. Furthermore, the integrated security system from Bosch provides reliable protection against intruders from outside.

Multiple Benefits

The installation of the Aviotec fire and smoke detector camera ensures significantly higher fire protection in demanding applications. The system is a future-proof investment for operators. In many cases, a VdS-approved system opens up discounts on the insurance premium or is even a basic condition for taking out insurance for high-risk systems.

Furthermore, Aviotec offers applications beyond fire safety. The intelligent video analysis also allows security monitoring and, for example, automatically raises the alarm in the event of theft or arson, currently the second most common cause of warehouse fires. The system also detects security risks such as blocked emergency exits and protects outdoor areas from intruders and vandalism.

Aviotec is also future-proof because new functions are available via firmware updates. In November 2021, Aviotec firmware version 7.81 brought new algorithms to the cameras that can report fire and smoke in changing weather and lighting conditions. And if the requirements for the fastest possible fire detection continue to increase in the future, the range of services offered by Aviotec's intelligent algorithms will also increase.

InnoSenT
smart. comfortable. safe.

Upgrade your motion detector with radar technology.

We bring your product to life with InnoSenT radar sensors.

- extensive object information for advanced functions
- early intruder detection and tracking

find your solution

Leading in Radar
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More information on the Aviotec fire and smoke detecting camera can be obtained here:



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SPECIAL FOCUS

Fire Detection in 2022

The State-of-the-Art in Fire Detection Technology has Taken a Leap Forward

SPECIAL
FOCUS

The heatwaves that are now affecting our daily lives ever more often are one cause of forest fires that are difficult to detect early on, before they have reached a dramatic scale. The chances of detecting a fire within a building or compound early on however are very much higher, thanks to various clever methods of monitoring the emissions and effects of smoldering or a fire. GIT SECURITY takes a look at some of the fire detection solutions available on the market right now.

We humans have four senses with which we can detect a fire: vision — seeing the smoke or flames, hearing — the crackling sound of burning, touch — the intense heat of a fire, and smell — the unmistakable odor of something too hot.

Fire detectors have a similar range of approaches like human senses to raising the alarm. They can ‘see’ flames or smoke by using either inbuilt or follow-up image analysis to determine that a fire is probably in progress. They can test the temperature, either directly from the surrounding air or indirectly using infra-red cameras. They can sample the air quality and find tell-tale particles of combustion. We are not (yet) aware of a detector that can ‘hear’ a fire, although there are detectors for the sound of breaking glass, which is a sure sign that something’s wrong!

Detecting Flames with Specific Light Wavelengths

Flames emit characteristic light wavelengths that are different enough from ambient light to provide definite proof of a fire in progress. This fundamental property is used by flame detectors with one or more infra-red or ultra-violet detectors that are tuned to these specific light wavelengths. Their response is both fast and reliable, and they provide both rapid detection and a very low false alarm rate. The Swedish company Unifire offers complete extinguishing solutions that also employ such flame detection methods to automatically initiate fire-fighting measures such as water sprinklers, dynamic robotic nozzles and/or foam generation.

The algorithms used to analyze normal incoming video streams for potential trouble are becoming more refined almost daily, and now deliver a reliable method of

smoke and flame detection from camera image streams. Movitherm employs cameras from Flir Automation as part of their early fire detection solutions. They also offer a highly informative two-part webinar on using the IoT for fire detection applications. The Aviotec IP starlight 8000 camera from Bosch has built-in analytic software and algorithms to detect smoke and flames as soon as they appear.

Heat More Easily Detected with IR Wavelength

You couldn’t have missed the media coverage of the recently commissioned James Webb telescope, but you might not have noticed the difference between its mode of operation and that of the venerable Hubble. James Webb is responsive to much lower, infra-red (IR) wavelengths outside the visible range, and these are where heat can be

easily detected. Thermal imaging cameras typically produce the slightly weird-looking multicolor images that the TV channels love to show when checking the temperature of sunbathers, but they also highlight hotspots that we cannot see and that cannot be detected by other means. IR sensors can also ‘see’ through smoke and vapor, and a combination of differently tuned sensors within one housing will detect emerging fires with a very low false alarm rate, ignoring intentional hot spots such as exhausts or chimneys. Johnson Controls have such detectors available in their product range, which also includes intrinsically safe devices for potentially explosive environments. EX-rated detectors are also in the comprehensive product range of devices for installation at potential fire sources that are manufactured by Esser Systems.

Aspirating Smoke Detectors and Passive Detectors Sample Aerosols from Gases and Combustion Products

Thick smoke is the obvious sign of fire, but a whole cocktail of gases and combustion products are actually emitted, even when a fire is only just starting. These aerosols can be sampled by aspirating or passive detectors that are trimmed to find increased levels of carbon monoxide, hydrogen or various hydrocarbons, for example. The actual components depend to some extent on what is actually burning and the appropriate detectors can be chosen to match particular materials that are stored or installed in that location. GTE Industrielektronik can provide expert advice on an all-encompassing solution from their Adicos range for your particular premises. To raise an early warning of potential trouble, the aspirating smoke detectors manufactured by Partrix Fire capture the tiniest nano-particles that are already emitted by smoldering substances.



◀ **Fire Detector by Johnson Controls: The built-in micro-processors monitor and respond to smoke density, fixed temperature, and rate-of-rise of temperature**

The C-Pro aspirating detector from Partrix charges particles to already detect fire threats at the pyrolysis stage ▶



Combination of Traditional Ionizing or Optical Smoke Detectors and Other Types will Ensure Safety

With all types of heat, smoke and flame detectors, regardless of the techniques they employ, it is the difference to what is a ‘normal’ situation that causes them to raise the alarm. The choice of detector to be installed therefore depends on what is going to be ‘normal’ and what difference can be expected when a fire is starting. In many cases, one type alone will not be sufficient and a combination of traditional ionizing or optical smoke detectors and

other types will ensure safety. Certain situations, however, preclude the use of the most common types of detector with, basically, nowhere to mount them. Take, for example, a recycling center. A very high temperature nest caused perhaps by a damaged battery could be undetected under a pile of material for a very long time before actually igniting. Just such a problem is detected by the Waste-Scan infrared monitoring system for early fire detection by InfraTec. In each camera housing are two cameras, one infrared and one visual, as a twin system. Pan-tilt heads and are used to monitor the area and images of

both channels are superimposed, which ensures excellent orientation and early fire detection. Patol offer infrared transit heat sensors to monitor waste or other material that is traveling along conveyor systems as part of their comprehensive solutions.

Burning material can also be detected when it is on a moving conveyor belt

Burning material can also be detected when it is on a moving conveyor belt

Burning material can also be detected when it is on a moving conveyor belt ▶



Options to Connect Detectors to an Alarm System: A Power and Signal-Carrying Cable

Detecting a fire is good; raising the alarm is better, so connecting the detectors back to an alarm panel or other centralized equipment — or even an app — will get the message through. The two options are either via a power and signal-carrying cable or via some sort of wireless link such as wireless LAN, a license-free frequency or even Bluetooth. The choice of which method to use will depend upon the local topology; the longest distance to be covered, the number of rooms/areas/buildings and the practicality of running cables at all.



◀ **Dresden based InfraTec provide the Waste-Scan and Fire-Scan systems that use thermographic measurement to detect hot spots**

Fire-Resistant and Flame-Retardant with Emission Rating to Ensure Minimum Possible Emissions of Smoke and Toxic Gases

It should go without saying that cable must be of a specially approved fire-resistant and flame-retardant type such as LSZH and comply with local standards and regulations for such installations. These may include a fire-survival rating (PH30, PH60 or PH120, for example), an operational rating in conjunction with the control equipment (BS8434-2 and BS8519 in the UK) as well as an emissions rating to ensure that the minimum possible smoke and toxic gases are emitted if the cable finally burns. Tratos is a respected manufacturer of such cables, with a wide range that covers every application scenario. They will also manufacture custom-designed cables if required. The Chinese cable manufacturer ZW Cables has a very informative website explaining their flame retardant and fire-resistant wire and cable products. Based in Dubai, fire-rated cable of various types are part of the broader Naffco fire-fighting product range.

Wireless Connection for Fire Detectors: Bluetooth for Short Ranges, WLAN for Longer Ranges

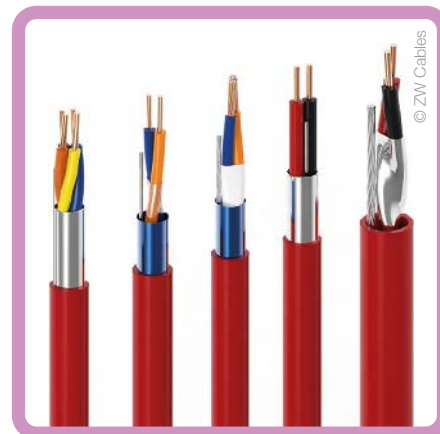
If a radio solution is preferred, perhaps because of there being no physical method of installing cable or to protect a building's interior decoration, then the first consideration as to the type of radio is the required range. Bluetooth-based systems have the shortest range - within buildings, a maximum of around 10 meters (30 feet). This makes them primarily suitable for a domestic environment, and there are dozens of suppliers worldwide of such devices for use in private homes or very small commercial properties with a clean-air environment.

A wireless LAN solution will have a considerably longer range, but will require an

absolutely reliable network with bandwidth always available i.e. not shared with other potentially bandwidth-hungry devices. During installation, each detector is enrolled into the WLAN and, if it is of the networked type, it will recognize its 'neighbors' to form a star or mesh network that will pass on alarms from one to the next and to the central fire alarm panel.

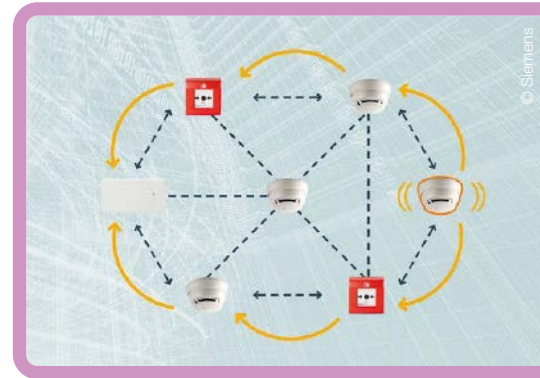
Frequencies for Smoke and Fire Detector Systems

Some smoke and fire detector systems use the license-free frequencies that are available in that particular country. These are not standardized worldwide at all; for example, in Germany, the bands around 434 and 868 MHz are free for short-range devices. There is of course no guarantee



ZW Cables provide detailed specifications of the operating conditions for their fire-resistant and flame retardant cables

that a particular frequency is not already occupied by another nearby device, so it is helpful to have the installation options of using an alternative adjacent frequency. Abus have three such wireless smoke detector products in their range, along with central control panels into which they can be integrated. The Siemens Swing series simultaneously uses two frequency bands to build a mesh of detectors, call points and the central control panel. For more extensive premises, you may prefer the products of Panasonic where there can be up to 4 base stations on each loop and up to 16 wireless units assigned to each base station.



▲ The Siemens Swing series uses two frequencies to provide a reliable radio mesh network of wireless smoke detectors and other elements

Essential Standards and Regulations for Smoke Detectors

In all cases, it is essential to check that the chosen solution complies with local regulations. These can include, amongst others, NFPA and UL 217 standards in America, BS5839 in the UK, EN54 and/or EN14604:2005 in Europe (and VdS in Germany), or AS 3786:2014 in Australia for example. Other minimum standards will apply in other countries so always check with the local fire prevention authorities. A final essential point to observe: wireless detectors run on batteries, so as soon as you put this issue of GIT SECURITY down, make a recurring diary entry to check and/or replace those batteries annually, even if the manufacturer says that they last longer!

Food storage monitoring with thermal camera by Flir ▼



Suppliers

- Abus | www.abus.com
- Bosch Sicherheitssysteme | www.boschsecurity.com
- Esser Systems | www.esser-systems.com
- Flir Automation | www.flir.com
- GTE Industrieelektronik | www.gte.de
- InfraTec | www.infratec.eu
- Johnson Controls | www.johnsoncontrols.com
- Movitherm | www.movitherm.com
- Naffco | www.naffco.com
- Panasonic | www.panasonic-fire-security.com
- Partrix Fire | www.partrixfire.com
- Patol | www.patol.co.uk
- Siemens | www.siemens.com
- Tratos | www.tratosgroup.com
- Unifire | www.unifireab.com
- ZW Cables | www.zwcables.com

HID Global Improves Passenger Throughput Efficiencies



HID Global released TripTick Halo, the company's latest contactless near-field communication (NFC), QR/barcode and contactless EMV payments solution to improve passenger throughput reliably and securely. The robust NFC

reader only requires integration with one validator, thereby simplifying a solution that typically requires several readers and validators across multiple entrance/exit points throughout a transport station. In high-density urban areas, where efficient and reliable public transportation is a necessity, it is important to maintain reliable and swift operations at the lowest cost possible. Through its single-user interface, TripTick Halo offers compliance to strict contactless payment standards, as well as reading capabilities of 1D/2D barcodes, as well as NFC/RFID tickets and tokens from mobile phones, tablets, wearables, contactless cards and paper in any orientation. Its intuitive and quick interface for data reading and writing translates into improved passenger throughput and higher efficiency for operators.

www.hidglobal.com

Multi-Layer Approach to Security Technology

Optex will use its stand 6C39 in Hall 6 at Security Essen to showcase a range of technology to create an effective, multi-layered security system. Fiber-optic sensors for fenced and buried perimeter applications, and the award-winning Redscan Pro LiDAR can create virtual perimeters or protect whole facades up to 100m in length. Dynamic event filtering allows for alerts to be configured to meet specific detection criteria or logic. The company will demonstrate the accuracy and versatility, creating a high-resolution virtual shield that will detect something as small as a child's hand. There will also be live demonstrations of its Intelligent Visual Monitoring solution that effectively 'bridges' all components of a security setup to create a visually verified monitored solution via the Secured Cloud, enabling users to verify alarms within seconds wherever they are.

www.optex-europe.com

Illegal Parking Detection

The Dahua WizMind Illegal Parking Detection is a much awaited traffic solution that can effectively solve traffic problems that are rampant on the road. As the quality of living condition increases, the number of people who can afford vehicles also relatively rises over time.



Illegal parking has become a big challenge for transport departments and traffic officers, especially in those cities that up to this day still manually issue parking tickets. A warning siren will be available in the upcoming camera model SDT5X425-4Z4-FAJG-PV-0832. When a vehicle parks in a no-parking zone, the alarm will be triggered and a warning voice audio will be played to warn the car to leave. This sound can be customized by the user on an app. www.dahuasecurity.com

Ajax Photo Verification is Integrated with the Evalink Talos Platform from Sitasys

The Evalink Talos alarm management platform developed by Sitasys now can receive photo series from MotionCam and MotionCam Outdoor motion detectors, enabling fast and secure alarm verification for monitoring stations in Switzerland, Germany, and other European countries. By combining the platform developers' and Ajax software engineers' efforts, the integration was carried out via Enterprise API and Virtual SIA DC-09 Receiver. This approach allows deep, two-way, and highly encrypted communication between Ajax security systems and alarm receiving centers. The monitoring stations receive: Seamless integration of Ajax notifications, visual alarm verification, remote security mode management. Alarm transmissions are certified and fully compliant with SLA's SP 1-6, DP 1-4, according to the standards from EN 50136-1. Evalink Talos is the fully-managed and automated alarm management platform developed by Sitasys AG. To support many different customers like security professionals and ARCs reliably and securely in their daily operations, Evalink Talos offers possibilities for smart workflows with enough scalability to reinforce business growth. <https://ajax.systems/>

Advantages of a Volumetric Microwave Barrier



Traditional volumetric microwave barriers have a very good coverage of the intrusion area, in terms of effectiveness and reliability. Here are the main strengths:

1. Easy to install: especially in the IP/POE version, everything is installed with a single cable.

2. Easy to set up: the barrier can be

set up in about 10 minutes, either by connecting the laptop directly to the barrier's head or remotely with the SW.

3. Effective against false alarms: thanks to Fuzzy Logic algorithms (256 Behavior Models + Side Target Discrimination) there is only one alarm per unit per year on average.

4. Managing the data of many zones: the IB-System IP collects the status of up to 1280 combinable devices with a continuous polling, and transmits it on the IP platform with a maximum delay of 0.5 sec.

5. Integrated with other sensors: from alarm and access control Panels – via relay with serial line, to VMS devices of major brands – via IP.

6. Competitive advantage in the price: it offers the best return on the cost of the Investment on the market thanks to the easy setting and the advanced function of false alarms reduction.

But what happens if you find yourself having to protect narrow corridors, where the intrusion area can be delimited by fences or vegetation to leave an area of even a single meter? Until 2019 active IR technology was used in these cases, which emits a narrow ray going into alarm when attempted intrusion interrupts it. Unfortunately, the same technology, optimal in laboratory conditions, once installed outdoors becomes subject to precautions, such as constant maintenance routines, and problems of disqualification the longer the range, due to solar glare or headlights, sandstorms, hail or fog, with related false alarms. The Micro-Ray comes with linear microwave technology: It provides high performance of intrusion detection in a ray that goes into alarm if interrupted. The above mentioned problems of malfunction in extreme conditions are avoided, thanks to the intrinsic effectiveness of the microwave perimeter technology, combined with the advanced Fuzzy Logic analysis. www.cias.it/en/

Access Control Solutions at Security Essen 2022

Salto Systems will premiere its latest access control innovations at Security Essen 2022, Sept. 20-23, in Hall 6, Stand 6B27, at the Messe Essen in Germany. For over 40 years, this has been the most important industry exhibition for security and access control technology under one roof with a comprehensive overview of new technology and the latest product innovations. Salto's solutions can create keyless buildings that are smart to own, operate, and manage. The company and its parent Gantner have joined to showcase together with partners the technology and solutions to drive intelligent building management and smart access technologies with more integrated and streamlined keyless and contactless solutions, such as the new Homelok platform for the residential market. Visitors will discover the latest smart-locking hardware designs, mobile and ID technologies, smart parcel locker solutions, and cloud applications for access control to experience how Homelok uses digital access technology to elevate access security and provide a simpler, seamless, and more convenient way to access and manage residential properties. Video surveillance and fingerprint systems as well as the XS4 One+ and XS4 Mini electronic locks and a new G3 model of the Neoxx electronic padlock will be on show. An updated Neo electronic cylinder adds functional improvements and installation options that make smart electronic access control to any door possible.



www.saltosystems.com

Facial Recognition Authentication Added to Management with SAFR Integration

Maxxess has added advanced facial recognition authentication to its E-Visitor visitor management solution for access control, with off-the-shelf integration to RealNetworks' SAFR technology.



Maxxess E-Visitor has established itself as one of the most flexible, secure visitor management solutions available, with frictionless and touchless access, removing many of the old inconveniences visitors, staff and contractors encountered to access premises, workspaces, guest Wi-Fi and corporate networks, as well as facilitate hassle-free time and attendance. Now, with SAFR's powerful facial recognition technology, organisations can ensure smoother and frictionless access with the assurance of increased security across their estates. Using the same biometric authentication is also strengthening network security for home and hybrid workers. Maxxess E-Visitor is used widely in commercial, hospitality, healthcare, universities, and mixed-use developments, with a range of edge devices such as facial readers, video intercoms and kiosks, allowing visitors to enter secure areas more easily without the need for old-style access cards or fobs. www.maxxess-systems.com

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www.eizo.eu/ip-decoding

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From Nano-Carbon to Fascia Stimulation

Haix Presents the New Connexis Safety+

On May 5, Haix, the shoe specialist from Mainburg in Bavaria, invited dealers and representatives of the trade press to the launch event for the new Connexis Safety+.

In good Haix style, moderator Roman Roell and co-moderator Sandra Hunke, supported by human biologist and fascia specialist Dr. Robert Schleip, led through the program. The highlight was then, of course, the ceremonial unveiling of the newest member of the Connexis collection. With the Connexis Safety+ there is now a safety shoe for outdoor use with active fascia stimulation and at the same time a plus in more safety, more wearing comfort and more performance.

What should a shoe look like that respects the foot? To find an answer to this question, Haix has been relying for years on its own development and cooperation with experts in orthopedics and research. Already in 2019, the shoe specialist from Bavaria brought Connexis Safety onto the market. According to the company, the world's first safety shoe with active fascia stimulation. Specially developed for indoor use and equipped with the Connexis technology, it not only ensures safe, but also fitter feet. The shoe reduces pain in the foot and improves general well-being, as confirmed not least by a recent study by the Technical University of Munich.

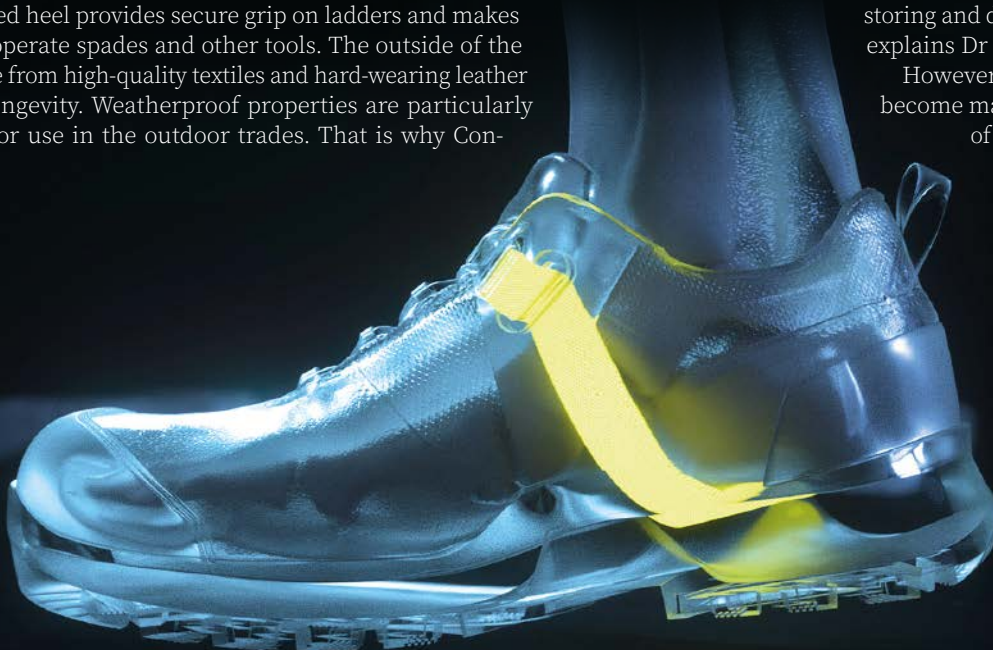
The new Connexis Safety+ was developed for the most demanding tasks, e.g. for use on construction sites, in road construction and in many trades such as woodworking, bricklaying or tiling. To protect against the visible dangers in these professions, Connexis Safety+ offers all-round safety. This is ensured by a lightweight nano-carbon toecap, an anti-perforation protection and a robust non-slip sole that ensures a firm grip even in wet conditions. A pronounced heel provides secure grip on ladders and makes it easier to operate spades and other tools. The outside of the shoe is made from high-quality textiles and hard-wearing leather to ensure longevity. Weatherproof properties are particularly important for use in the outdoor trades. That is why Con-

nexis Safety+ has a Gore-Tex membrane, which makes the shoes permanently waterproof and breathable at the same time.

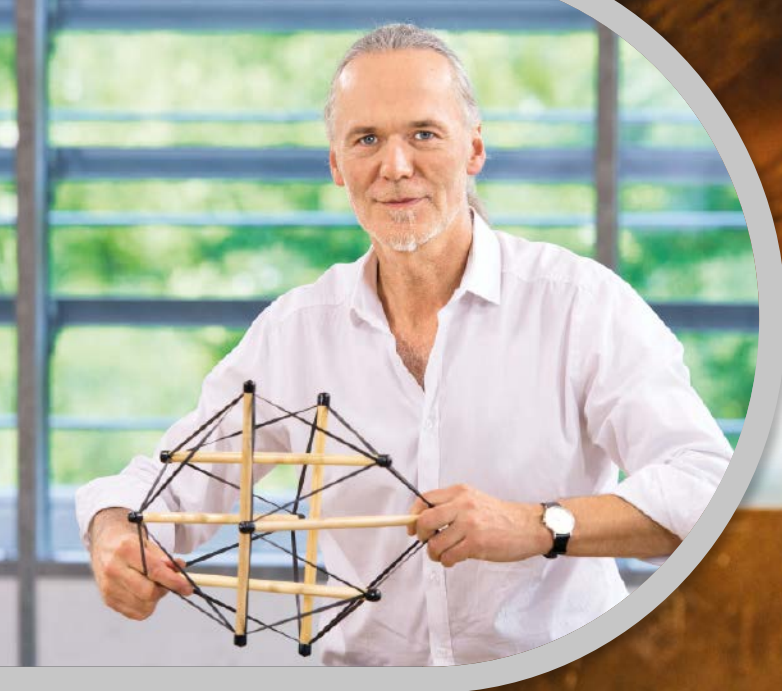
A Plus in Comfort and Performance

Not only trip hazards and heavy objects, but also unfavourable working postures are a danger. To protect against these hazards as well, Connexis Safety+ offers not only a plus in safety, but also in comfort and performance. Every day, for example, hundreds of thousands of employees spend their working day standing. Especially in the outdoor trades, permanent standing demands maximum performance from the body. The result: tired feet, heavy legs, and back pain. The human biologist and fascia researcher Dr. Robert Schleip has identified the culprits: often it is the fascia, a fibrous network of connective tissue that envelops muscles, organs and bones and holds the body together. "Imagine it like a sausage casing: without the fasciae, our muscles would hardly have any tension. Fasciae also play a big part in our movements by storing and discharging kinetic energy," explains Dr Schleip.

However, the fascia tissue can become matted, e.g. caused by a lack of movement or unfavourable



The fascia band (neon yellow) provides an active stimulation of the fascia



Human biologist and fascia researcher
Dr. Robert Schleip demonstrates the
function of fascia on a model



The new Connexis Safety+ was developed specifically for outdoor use
and scores high in terms of safety with a nano-carbon toe cap, a puncture
protection and a non-slip sole with heel for a secure grip on ladders

movements. "This can also happen if we lock up our feet in the wrong footwear. Conventional shoes stiffen the foot like a plaster cast. As a result, the fasciae tend to become matted because they are not sufficiently moved and exercised. This in turn can lead to pain," says Dr Schleip.

To prevent the feet from being locked up, Connexis Safety+ is designed to respect and stimulate the feet. A tape runs through the shoe, wrapping around the tarsus and exerting pressure on the fasciae in the sole of the foot. In this way, the fascia tissue is lightly stimulated throughout the entire wearing period. This activates the muscles, stimulates the blood flow, and reduces negative effects on the musculoskeletal system – for fit feet and more performance. In addition, Connexis Safety+

is adapted to the natural shape of the foot. Its special construction gives the feet more space instead of confining them as if in a cast. This ensures a more stable stance and prevents malposition.

Made in Europe

Like all Haix products, Connexis Safety+ is manufactured in Europe. This is not a matter of course, because European regulations are sometimes lax: if, for example, the upper and sole of a shoe are combined in the EU, it is allowed to carry the "Made in Europe" label – regardless of where the individual parts were originally manufactured.

Not with Haix! If a Haix shoe says "Made in Europe", the company guarantees that it was manufactured entirely in Europe – in

modern production facilities in Germany, Croatia, and Serbia. There, the company can closely control working conditions and product quality to enforce the highest standards. Because for Haix, "Made in Europe" does not only stand for the plus in quality. It is also a commitment to fair working conditions, to more sustainability and to the European values.

Images: © Haix

CONTACT

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PPE

Minimise Injuries with Maximum Protection

Ejendals Invests in Research and High-Tech



Werner Schwarzberger,
Regional Sales Director – Ejendals AB

Investment, research and sustainability are the goals of Swedish manufacturer Ejendals in its development of protective solutions for feet and hands. The goal: zero injuries and the safeguarding of health. The focus here is on service and consulting expertise in combination with an extensive product portfolio. In an interview, Werner Schwarzberger, Regional Sales Director for Ejendals D-A-CH explains what is important to him and his team, and how the D-A-CH market position is to be further developed.

GIT SECURITY EMEA: Mr. Schwarzberger, a brief insight: How did the year go for Ejendals and what do the future prospects look like for the company?

Werner Schwarzberger: We see the expansion in the D-A-CH region as a very positive development. 2021 was in line with our expectations and it looks like we are also going to be able to meet our predictions for 2022. With our top brands Tegera for hand protection and J alas for foot protection, we are certainly well equipped. The

regional proximity of over 30 team members is something that appeals to customers and we put our expertise into practice through training and educational programmes. This combination of product quality, service and regional strength gives us a positive outlook for the future, although of course the multiple crises have had an impact on all sectors of the economy. Our stated goal: to become one of the top 3 manufacturers in the respective product group within the next few years. We are currently preparing, developing and positioning ourselves for this.

“
We want to minimise injuries to the hands and feet as much as possible.
 ”

Ejendals have systematically built up the product portfolio for the ESD sector for instance, to offer the right gloves for all purposes in the ESD sector ►



To be among the top 3 manufacturer's of shoes and gloves. How do you intend to accomplish this?

Werner Schwarzberger: Products, expertise and regional presence are our strengths. Customer focus is particularly important to us, both in terms of proximity and availability. We have systematically built up the product portfolio so that we have an extensive range, for the ESD sector for instance, meaning we can offer the right gloves for all purposes in the ESD sector. Furthermore, we have also successfully developed gloves for use in mechanical safety and for protection against cuts. The same goes for our shoes. Attributes such as comfort, fit and design are a matter of course for our quality standards. We focus on product families, both for shoes and for gloves. This enables us to meet a wide range of requirements.

Keywords: education and training. Do you have an example of this?

Werner Schwarzberger: Of course. Customers want reliable partners. We conduct on-site safety assessments, offer technical support, training and advice, as well as workshops on topics such as protection against cuts. This training and expertise is a central part of our company philosophy. We support companies from the very beginning. Another advantage is of course the availability of our goods. This is just as true today, despite the adverse effects of the global economic crisis situation. Our product availability is at over 95% and we aim for that to be 97%. This puts us way ahead of the competition, in terms of reliability. This is important to us.

You were talking about investments. What does that mean, exactly?

Werner Schwarzberger: For example, we purchased an innovative manufacturing facility for our shoe production for 1.8 million EUR, which features three-sole

injection technology. This is a new development and marks the high-tech era in shoe production. The first products will be launched in Sweden and Finland as early as the end of this year. In the context of opening up further sectors, such as the chemical industry, we have upgraded our own laboratory with an investment of around 300,000 EUR so that we can carry out our own tests and trials. We are now equipped to evaluate chemical breakthrough times ourselves, for example.

Sustainability is also playing an increasingly important role in the PPE sector. What distinguishes Ejendals here?

Werner Schwarzberger: Our Sustainability Report, which consistently pursues sustainability as an overall strategy. We invest in sustainable technologies and developments for the long term. Solar panels on our buildings, a reduction in CO₂ emissions and improved waste management are just a few examples. Furthermore, we will also switch our vehicles for an electric fleet. Environmental protection and sustainable products are what we demand of ourselves, as well as what our customers expect of us.

Customers rightly demand that the topic of sustainability be part of the company.

Which other customer wishes or requirements do you adhere to?

Werner Schwarzberger: Companies invest in their teams. Modern shoes, gloves and work clothes that not only protect but which the wearer feels comfortable in are simply part of today's working life. They also tell the wearer that they are valued as an employee and that their health is a priority. Wellbeing is particularly important: comfort, fit, design. In general, customer requirements are becoming more bespoke and complex. This is exactly where we come in: we support our customers by providing high-quality products and offering consulting and service expertise to reach the common goal: zero injuries to hands and feet.

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MACHINE AND SYSTEM SAFETY

Concepts for Communication and Signal Evaluation

Machine Safety in Intralogistics – Best When Networked

When it comes to machine safety in conveyor and storage technology systems, it's vital that the topic of 'networking' is on the agenda, owing to the extensive nature of the systems, and the numerous and different safety switchgear devices that they contain. With a sophisticated networking concept, you can achieve multiple goals in one go – transparency in communication, 'lean' wiring and intelligent linking of different system areas. Here, system engineers can choose from a number of different options.

The fundamental principle of machine safety is no different in intralogistics than in production or assembly: wherever humans and machines work together, humans need to be protected. However, in intralogistics, systems are often very extensive, and there are many and different 'interfaces' to staff, such as transfer stations.

Also typical are the high level of automation and, in some cases, the extremely high product turnover rates. This places high requirements on the productivity and failure reliability of systems. Moreover, in some task areas – such as automated palletisation – the components being handled are comparatively heavy. This brings an elevated risk of injury.

Looking for Sophisticated Concepts

So, what does this mean when it comes to 'designing' machine safety for conveying and storage systems? Irrespective of the specific and individual requirements, there should be a sophisticated concept in place for each and every hazard point that ensures the best possible integration into workplace workflows. This will create the prerequisite for high productivity and minimise any incentive there might be to tamper with the protective device (a frequent cause of occupational accidents).

Optoelectronics or Guards?

This kind of concept also includes a clear view of the process and indication of the operating states of safety switchgear devices.

As guards often complicate workflows (e.g., when packages are moved into and out of the danger area), the use of optoelectronics may be more suitable. This also applies to area protection around packaging machines, for example.

The Trend: Networking Instead of Individual Wiring

As intralogistics often involves larger systems with numerous danger areas and corresponding protection needs, it is one sector in which the networking of safety switchgear devices has been well established from the outset. This has meant the replacement of traditional individual wiring of each switch-gear device with efficient, network-like wiring concepts. There is a range of options available here, one of which is the AS-Interface Safety at Work (AS-i SaW) safety bus.

AS-i SaW: Minimal Wiring Effort

The AS-i-Safety standard not only facilitates rapid installation with minimal wiring effort – it often saves on several hundred metres of wire for a single application – it also offers maximum flexibility, e.g., in the event of system modifications or new requirements and safety requirements.

Another advantage is the comprehensive range of diagnostics functions. These make for more rapid identification of the source of error in the event of irregularities or faults. This is particularly beneficial in the case of extensive, complex systems, and can help to reduce downtimes significantly. For these reasons, many

intralogistics systems that Schmersal equips with safety systems are networked using AS-i SaW. This networking is also made easier because of the number of series of safety switchgear device (including optoelectronics and operating units) that are available as 'AS versions', i.e. with integral AS-i SaW interface.

Alternative – the Safety Fieldbox

The 'Safety Fieldbox' system can also be used as an alternative to the AS-Interface Safety at Work. A Safety Fieldbox enables field connection of up to eight safety switchgear devices of different types. Here, safety switch-gear devices only occupy a single device connection in each case, irrespective of whether it's a sensor or interlock. Both the safety-related and the operational signals are captured and connected to higher-level control modules via the Profinet/Profisafe protocol. The flexibility of the system will be further enhanced in the future, with the user having a choice of versions with connection to EtherNet/IP CIP Safety and Ethercat FSoE.

Two Solutions, Common Objectives

Both solution concepts feature straightforward installation and commissioning. What's more, both alternatives offer potential for cost savings thanks to extensive diagnostics data and straightforward installation and wiring. Additionally, both solutions offer extreme flexibility when it comes to adapting the individual safety requirements of complex systems and machinery. Moreover, additional transmission of all diagnostics signals from connected devices ensures optimum process transparency. Plus, increasingly important as an argument is the saving that bus systems can achieve on resources like plastic and copper.

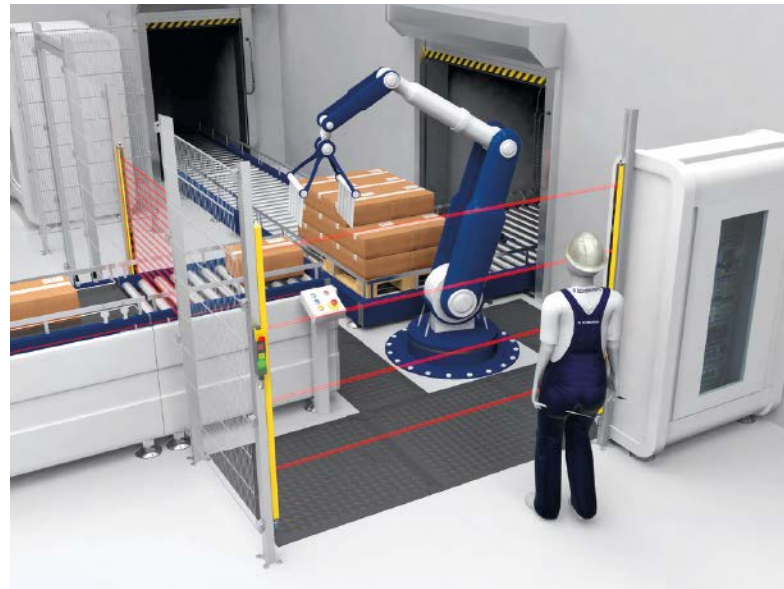
Capture and Evaluate Operational Signals via SD 4.0

If a user only wishes to capture and evaluate operational, i.e., non-safety-related signals, the SD System solution offers a third way. This system allows electronic safety sensors and solenoid interlocks to transmit comprehensive status and diagnostic data to a higher-level machine controller.

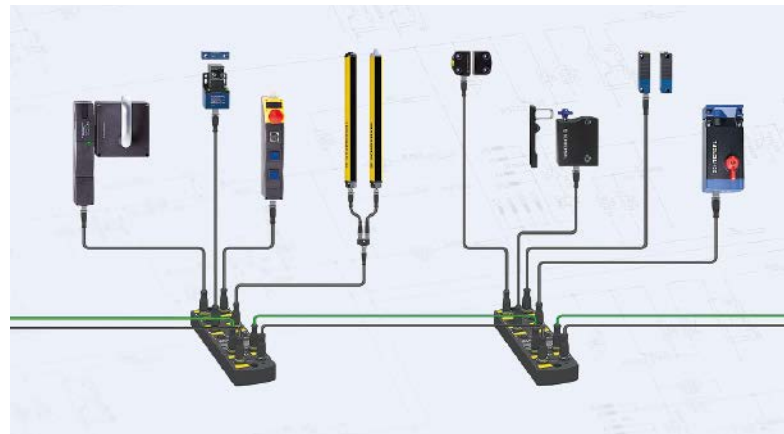
A new feature of the SD bus is the significantly expanded networking option to include higher levels. A prerequisite for this is the connection to OPC UA as a standardised protocol for M2M communication, which has the advantage of better visualisation of diagnostic information collected in the field, and better access via mobile devices such as tablets and smartphones. This helps to facilitate predictive maintenance and additional concepts as part of Industry 4.0.

Outlook – Alternative Wiring Concepts are Coming

The examples and the three bus systems make one thing clear – alternatives to traditional wiring in safety circuits are of particular use in intralogistics systems. There are established concepts from which to choose, and the appropriate end devices to pair with them. It is only logical that alternative wiring concepts are undergoing further development. New versions of the Safety Fieldbox are conceivable, for example, perhaps with additional functions and in combination with switchgear devices. Plus, doing away with hardwired communication in its entirety in favour of wireless safety system would introduce benefits in terms of installation effort and flexibility, particularly in intralogistics.



Widespread intralogistics: optoelectronic protective devices allow flexibility in safe materials handling



As many as eight safety switchgear devices can be connected in the field via the Safety Fieldbox. The data are captured and forwarded collectively. This saves on wiring.



Versatile and flexible: the SD 4.0 data bus enables integration of safety switchgear devices into preventive maintenance concepts

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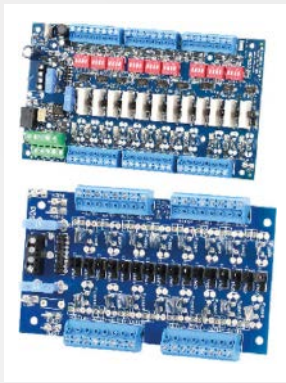
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Altronix Advanced Dual Voltage Modules

Altronix announces the availability of the new Access Power Controllers and Power Distribution Modules. These new sub-assemblies further increase access control system capacity in Altronix Trove Access and Power Integration Solutions, and any other wall or rack mount solution – reducing overall equipment and installation costs. “Our new sub-assemblies deliver up to twice the outputs and feature the same stackable mounting footprint, often used with our VR6 and Tango1B,” said Ronnie Pennington, Director of Sales for the Americas, Altronix. “More outputs in less space also means more room for controllers inside an enclosure. This allows installers to easily configure and scale new and existing systems, especially when pre-configured inside an Altronix Trove kit.” Altronix products are NDAA and TAA compliant and backed by a lifetime warranty.



www.altronix.com

A+A 2023 Under the Sign of Sustainability and Digitalisation



The world's leading trade fair and congress event for personal protection, occupational safety and health at work will take place in Düsseldorf from 24 to 27 October 2023. Under the motto “People count”, numerous exhibitors will present innovative solutions and concepts for safe and healthy

working at A+A 2023. This time, the thematic umbrella of the leading international trade fair is formed by the big megatrends of digitalisation and sustainability. Decision-makers and experts will find cross-sector solutions and answers to the important questions surrounding a safe, healthy and sustainable workplace. From personal protective equipment (PPE), operational fire protection, environmental protection or disaster prevention to offers for ergonomic and healthy workplace design. The focus will be on topics such as sustainability and the circular economy of products, digital services in the provision, care and storage of PPE, mobile working, exoskeletons (wearable robots) and wearables. Exciting forums and side events as well as an innovative Start-up Zone complement the trade fair and set new, future-oriented impulses. “A+A is unique because it offers tangible product presentations as well as exciting networking formats for a lively and personal exchange. It is therefore a ‘must’ for every decision-maker across all sectors, because health and safety at work are becoming an essential part of corporate culture, especially in the age of New Work and digital transformation,” explains Petra Cullmann, Executive Director, Messe Düsseldorf GmbH.

www.aplus-online.com

Interschutz 2022: Meiko Expands Portfolio

At Interschutz 2022, Meiko presented itself for a second time only – but as a convincing solution provider in the respiratory protective equipment workshop of fire departments and the industry. The new Meiko product portfolio for personal protective equipment (PPE) further expands the range for more safety in the respiratory protection workshop. “We have deliberately continued to work on reducing the dangers for equipment attendants when working on and with contaminated equipment with a device for pre-cleaning respiratory protection equipment,” explains Jens Jacobsen, Meiko Sales Manager PPE. At Interschutz, the focus was on TopCleanD, the device that was developed as an alternative to manual pre-cleaning and covers the processes in the respiratory protection workshop with another valid mechanical solution.



www.meiko-uk.co.uk/en

Comprehensive EN54-13 Approved Fire Alarm System



As part of its ongoing commitment to its ‘Smarter Protection Matters’ philosophy, Siemens has announced the launch of IP8, the latest version of Cerberus Pro, the company's comprehensive EN54-13 approved fire alarm system. One of the central features of

this version is the introduction of a 1.5A per line high power driver which allows more devices to be installed on a single loop, increasing flexibility and improving efficiency. The new IP8 loop cards can accommodate more than double the capacity. While the majority of addressable systems are wired as a loop, some may have spurs. The system can also support this, up to a maximum of 40 spurs per loop. Despite the increase in power, this has resulted in smaller batteries and housings. Through remote services, maintenance can be simplified and business interruption minimized with monitoring and periodic testing of devices undertaken off-site. This is across devices on the system, from detectors and voice messaging to sounders and beacons. Cerberus Pro is an open protocol system, i. e. the language which is used to allow different components (detectors, sounders, call points, control modules etc.) to communicate with the fire alarm control panel allows other systems such as building management systems (BMS), CCTV and access control to be easily integrated.

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