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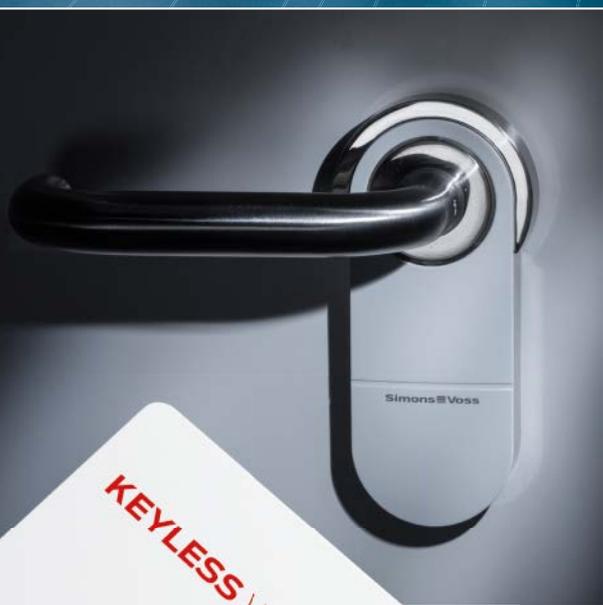
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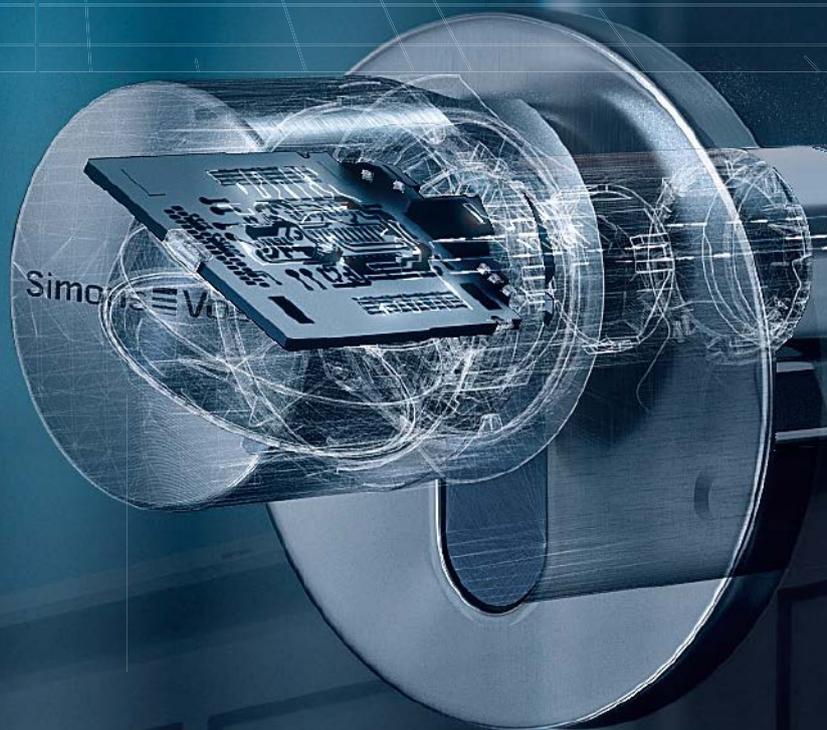
Dear Readers,

In November, we hosted our first virtual event, Wiley Industry Days, to offer a platform for exchange in these times of disruption and with the background of many shows been cancelled.

We had around 1,300 industry specialist who attended the virtual exhibition and conference. Thank you for all who participated as exhibitors, speakers or attendees.

We are very happy with the outcome and have already plans for the next edition that will be held June 7th to 9th in 2021. During Wiley Industry Days we held an award ceremony where we have announced the winners of GIT SECURITY AWARD 2021. For those of you who missed the presentation, on page 16, you will find the results and all the winners.

As always, this issue is fully packed with clever solutions that may help you in your daily work. In addition to this, we have tried to shine a light on our market from a management perspective. We have talked to many industry leaders to get a feeling for market trends and to see how they have reacted to the new situation during the Covid-19 pandemic.

Access control solutions play a vital role for security anyway, but especially in these challenging times. We spoke to Salto, the Spanish company who acquired Gantner to form a global leader in electronic access control, we asked Assa Abloy's Stephanie Ordan to discuss the future of access management with us and we spoke with STid about how they transform access control challenges into opportunities.

Another highlight of this issue are the answers of five video surveillance manufacturers to our questions about high resolution cameras starting on page 26. Five different approaches to reach one common goal: How to achieve a broad coverage of areas with a high forensic value and with as few cameras as possible.

We thank all are readers and partners for their support in this super challenging year and we hope you will enjoy some quiet days with family and friends at the end of this year.

Stay safe and enjoy reading this issue!

Heiko Baumgartner
For Wiley's Safety and Security team

■ MANAGEMENT

■ SECURITY

Welcome to the knowledge age. Wiley builds on its 200-year heritage by partnering with universities, businesses, research institutions, societies and individuals to develop digital content, learning, assessment and certification tools. Wiley continues to share and deliver the answers to the world's challenges helping you to further your mission.

WILEY

Flemish Government Makes a Fresh Start with Nedap

The Flemish Government has chosen AEOS access control by Nedap to secure its sites across Belgium and other European countries. It has awarded a 6-year framework contract, beginning in September 2020, to Nedap channel partner G4S. This will involve G4S replacing the technology of more than 4,000 doors with AEOS. The new AEOS system will accommodate up to 50 software users and will feature various integrations including visitor management, automatic number plate recognition, mobile readers, and QR code readers. This agreement replaces an incumbent supplier that had served consecutive framework contracts and whose technology was installed on more than 2,000 doors. The Flemish Government was looking for an open system that provides the freedom to select which technology it integrates and which installers it works with. It currently has a wide mix of access control systems at its premises in various locations and wants to introduce more standardization through AEOS, including the use of standard identifiers that are common across Europe. **www.nedap.com**

iLoq Products are Available from 1,000 Retailers Around the world

Finnish digital locking company iLoq is growing rapidly. The company's access management solutions are now available in 1,000 locations in nearly 30 countries around the world. iLoq was founded in 2003. iLoq employs more than 170 people and currently has sales offices in Sweden, Denmark, Norway, Germany, the Netherlands, France and Spain, with new country offices being prepared. The company's retailers are also growing rapidly: the digital locking and mobile access sharing solutions can be purchased from more than 1,000 retailers in nearly 30 countries, from Australia to Greenland. "COVID-19 has created many challenges for iLoq during 2020, but I am proud to say that we have not only survived, but thrived. Our sustainable digital locking and access control solutions continue to solve security issues and reduce the lifecycle costs of many industrial segments. We are growing rapidly," said Heikki Hiltunen, president and CEO of iLoq. **www.iloq.com**

Freedom Cloud ACaaS Enables Pay-As-You-Go Remote Access Control

Identiv has released Freedom Cloud, cloud-based Access Control as a Service (ACaaS). This gives organizations the option to pay as they go and only for what they need. Users can control, manage, and maintain their physical access control system (PACS) via intuitive browser-based web administration to manage all aspects of PACS from anywhere, anytime. This release transforms the company's cyber-secure Freedom Access Control product into a cost-effective, hassle-free ACaaS. Access control hardware remains onsite, and software and servers are removed and stored at data centers. Freedom Cloud software is patched, upgraded, and maintained seamlessly with no interruption to daily operations. Identiv's new Freedom Mobile is also available now, allowing frictionless physical access to a door using native GPS and Bluetooth technology directly from a mobile device, replacing the need for a physical credential. **www.identiv.com**

Milestone Community Kickstarter Contest 2021

Software developers will no doubt play a vital role in developing new visual technologies that can help address rapid and disruptive changes in society, the COVID19 pandemic being the latest. With the Milestone Community Kickstarter Contest, Milestone Systems invites developers, individuals as well as organizations, to discover new applications and capabilities that can 'plug in' to the XProtect VMS product family. The winning concept can be an integration, added functionality, widget or code that extends the use of VMS in any useful capacity. Participating developers can create a visual tool, a device trigger, or a base for analyzing data, or measure information that can be applied in new ways. The two requirements are that the solution is integrated with the Milestone XProtect VMS, (possibly using the MIP SDK), and that the idea must be the contestant's own intellectual property. The three finalists can pitch their ideas directly to the Milestone Community at the 2021 Milestone Integration Platform Symposium (MIPS2021). The winner will be awarded USD$10,000 in cash and USD$55,000 worth of development and marketing resources or activities. Developers must submit their idea by December 15, 2020. **www.milestonesys.com**

NSGate Distribution Agreement

NSGate has announced that they have signed a distribution agreement with Topnet Distribution FZCO, a regional value added distributor of network infrastructure, ICT and security solutions in the Middle East. With this agreement, NSGate's full range of cutting-edge solutions for outdoor video surveillance systems and industrial networking products will now be available across the Middle East through Topnet. NSGate is the creator of NSBox modular and scalable outdoor access nodes that discover a new segment of the outdoor video surveillance market. They provide trouble-proof operation of connected video cameras with a secure power supply, reliable data transmission, and protection of sensitive equipment from surges caused by lightning and grid power fluctuations. "We are happy to announce the partnership with NSGate from Russia for the distribution of our complete product range to our customers", said Kandasamy Ganesan, Managing Director at Topnet. **www.nsgate.com**

Gulfnet Security Systems Partners with Patriot One as Middle East Reseller

Gulfnet Security Systems has partnered with Patriot One Technologies, developer of the Patscan Multi-Sensor Threat Detection Platform, to purchase, deploy and service as the Middle East region's security system integrator. Gulfnet has been servicing the Middle East region for over 16 years from the United Arab Emirates, where the Company will focus its initial Patscan platform sales and deployment effort before expanding to other Middle East countries. The first deployment will be at its own Abu Dhabi Headquarters, where clients from the UAE and the region can see the solution in use. "We are excited to begin work as Patriot One's Middle East security system integration partner," said Dani Diab EVP of Gulfnet. "Our goal is to showcase the touchless, unobtrusive experience the platform can offer to government and businesses across the region." **www.gulfnetsecurity.com**

Androvideo and OSSA Announce First Camera Built to OSSA's Technology Stack

The Androvideo Smart Edge security camera earns the 'Driven by OSSA' seal as the security industry embraces open ecosystems for a prosperous market as it follows their technology stack. OSSA (the Open Security and Safety Alliance) drives an open platform principle and philosophy to open up the security and safety marketplace to fuel innovation beyond the limits of a single organization. The 'Driven by OSSA' seal indicates the product follows the OSSA technology stack for video security devices that prescribes the use of a common operating systems (OS), with the first two OSSA specifications being an application interface specification and a compliant camera definition specification. The MD2, EBL2 and VD2 cameras in dome, bullet and vandal dome form factors incorporate various robust technical features. The new product line provides market players with a highly optimized, application-ready platform for rapid AIoT development. **opensecurityandsafetyalliance.org**

Dahua Technology Upgrades Its Open Application Platform

Dahua Technology has upgraded its open application platform by launching Application Marketplace and DHOP Community on its new Dahua Hardware Open Platform (DHOP) website. DHOP is the company´s key initiative to bring together technology partners, system integrators, resellers and end-users. By opening its hardware devices to 3rd party developers, DHOP allows them to embed smart applications for the security and IoT industry. Information about the developed solutions is made available on the application marketplace. System integrators and end-users can visit the marketplace in search for flexible solutions that adapt to their needs at any given time. Video analytics solutions at the edge have become of strategic importance for the company in recent years. The R&D department has successfully implemented AI functionalities on Dahua cameras, equipped with native VCA solutions. **www.dahuasecurity.com**

Hikvision Innovation to Secure Truck Parking Standard

When French logistics company PKM Logistique built a huge new site in Clairoix, France, they turned to reseller SAS Serenity for its security solution, who delivered a complex solution using Hikvision products. More than 120 4K IP cameras, fisheye 360 cameras, access control products and a Hik Central VMS were used. The company needed to have a high level of security in the truck parking lot to comply with 'TAPA' certification. Building multiple layers of security, firstly the trucks can only enter if the plate-reading ANPR cameras validate the pre-recorded accesses. Thermal cameras are placed around the periphery, providing dual video sensors and extremely reliable intrusion detection. The entire truck parking area is monitored by 180° Pano Vu cameras to provide a global view of the area. Drivers are also verified through access control measures before going to pick up the trucks. These combined measures made the truck parking lot very secure and enabled PKM Logistique to achieve TAPA accreditation. **www.hikvision.com**

Gunnebo Sells Integrator Business in Spain and Portugal to Trablisa

As part of Gunnebo's strategic aim to focus on its core business, an agreement has been signed to sell the Iberian integrator business for electronic security with around 190 employees to Spanish security company Trablisa. The transaction is expected to be closed later this week. The transaction is in line with Gunnebo's strategy to create more focus on the entrance control, safe storage and cash management business units. It is also the result of the ongoing evaluation being carried out to secure the profitability potential of each operation within the 'other business' unit. "Trablisa, with its expertise and knowledge in the security industry, has every potential to continue developing the business to the benefit of our employees and customers," says Stefan Syrén, president and CEO of Gunnebo Group. "Trablisa has a very strong platform to continue our successful path," says Alberto Bordoy, the company's CEO. **www.gunnebogroup.com**

Acre Acquires Texas-Based Razberi Technologies

Acre, a global leader providing state-of-the-art security systems, has acquired Razberi Technologies of Farmers Branch, Texas. This purchase will enhance Acre's strategic expansion plans to strengthen its video and communications business and product portfolio. Razberi, which was founded in 2011, has developed a portfolio of products that enable enterprises to deploy a simple, secure best-of-breed video surveillance system. The open product platforms work with third-party video cameras, video management and video analytics software. Acre will leverage the technology and expertise of Razberi beyond video across its access control brands to provide server builds, cybersecurity and system health monitoring. Tom Galvin will remain as the General Manager of the business post-acquisition and will be instrumental in integrating Razberi into Acre. Imperial Capital were the advisors to Razberi on this transaction. Financial details of the transaction were not released. **www.acre-co.com**

Amthal Adds DHF Membership to its Credentials

Amthal has become a full member of the prestigious Door and Hardware Federation (DHF,) highlighting its ongoing commitment to health and safety across its automated gates, product and service portfolio. The DHF is a not-for-profit trade association for companies associated with locks and building hardware, doorsets, industrial doors and shutters, domestic garage doors and automated gates. Independently owned, Amthal Fire and Security is dedicated to satisfying end user needs for security safety and convenience offering design, installation, maintenance and monitoring of advanced electronic fire and security solutions, including intruder, fire, access, and CCTV solutions. The company is accredited by the Security Systems and Alarm Inspection Board (SSAIB), United Kingdom Accreditation Services (UKAS) and British Approvals for Fire Equipment (BAFE). **amthal.co.uk**

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HIKVISION igus IPS Intelligent Video Analytics milestone MOBOTIX optris infrared measurements pcs Polytec Qognify P3

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Synergies for access control: A Gantner terminal and a Salto smart door lock

ACCESS CONTROL

Joined Forces

Salto and Gantner Form a Global Leader in Electronic Access Control

In October Salto has acquired Austrian vendor Gantner. The leading manufacturer in electronic access control solutions has one of the broadest product portfolios in access control worldwide. The combination of Salto and Gantner will form a company with a strong position in cloud, mobile access, and customer-centric solutions such as ticketing systems and cashless payment. We had the opportunity to talk with Aznar Sethna, Chief Marketing and Sales Officer at Salto, about the acquisition and the future offering.

GIT SECURITY: In the video Salto posted directly after the acquisition, it was mentioned that already in 2015 Salto wanted to acquire Gantner. Can you give us some details about how the acquisition developed?

Aznar Sethna: We have always seen Gantner as a supplier of modern access control systems. And here in particular with solutions for special vertical markets where Salto was not so strongly represented. Contact was therefore established at an early stage and the exchange of information has been maintained over the years. This exchange was very open,

cordial and characterised by mutual recognition. There were several reasons why a takeover did not occur in 2015. One of them was certainly the fact that five years ago we were a much smaller company and such a takeover would have been more difficult to handle then than today. Sometimes things just have to evolve. And now a number of circumstances have come together in an ideal way: Gantner has grown strongly in recent years, has brought new solutions to the market, has decisively expanded its portfolio through acquisitions, the previous owner was willing to sell and we also felt ready to handle such a transaction.

Can you describe what Gantner brings to the table and how they will diversify the product offering?

Aznar Sethna: On the product side, we see mainly three things: Gantner has a mature and comprehensive platform for intelligent locker locking systems, offers cashless ticketing and payment systems and has versatile terminals in its range – all solutions that Salto has not offered so far. As there is virtually no overlap in the portfolio and both companies are in a very good financial position, the acquisition aims to achieve more with existing resources – especially with the current

workforce – than would be possible separately. As both companies operate in different vertical markets, together we will be able to significantly expand our respective presence through the expanded product range.

This enables us to accompany our users practically the whole day: This starts with locking the flat door with a smart door lock, continues with access control, management of workout plans, cashless payment for refreshments and checkout at the gym, and continues with complete access control for doors, lockers, parking and lifts at the workplace, including cashless payment in the canteen. The circle is completed with the booking of tickets, cloakroom management and cashless payment processing when attending a concert with the corresponding allocation of access rights. Digital access rights and cloud technologies form the technical basis for this, which is already available today. Together we can establish this unique approach much better in the market.

You will have 1,200 employees in 40 countries. How do the different company cultures fit together in the new organization?

Aznar Sethna: We fit together very well. Both companies are strongly technology and R&D driven, have long since brought the latest technological trends such as cloud or mobile access to market maturity and are selling them successfully within their portfolios. In short: we set market standards and do not copy from others. This mindset is firmly anchored in both companies and will be the basis of our merger. In addition, Gantner and Salto attach great importance to lean organisational structures, short distances and open communication between all parts of the company. Therefore, there is no dictation from Salto about how what has to happen. Rather, it is about learning from each other and adopting the best methods and processes. Both companies have done very well so far in developing skills – and we want to continue to do so in our joint company.

Both companies have strong R&D departments with 230 dedicated to R&D people. Can you outline how they will work together in the future?

Aznar Sethna: Of course, discussions have long since begun on how we can effectively connect the various locations and competencies. However, we have not issued a rigid timetable for this – as you can see from other takeovers in the

Aznar Sethna, Chief Marketing and Sales Officer at Salto

access control sector, such plans do not work in practice. We want to give ourselves the time we need. Responsible for the implementation will be Michael Unger, previously the head of product management at Salto. He will involve all stakeholders worldwide and coordinate the process. Due to his previous position at Salto, he has worked across departments and has had very close contact with the development department. He is therefore exactly the right person for this role.

Both parts of the company are very strong in cloud solutions and automated access processing. How are you going to enhance the end-user experience?

Aznar Sethna: Our end users will have two main advantages: easier integration into their system environment and optimised internal processes. After all, one of the most important features of cloud solutions is their comparatively simple integration via APIs. We will use this not only to link the systems of Gantner and Salto, but also to connect third-party systems. CRM and ERP systems today often already run in the cloud and we can integrate our joint solutions here without much effort. The end user benefits

from lower costs, higher security and less maintenance. In addition, internal processes can be optimised via integrated systems. Automation minimises error sources, reduces costs and improves traceability. At the same time, the user experience with integrated and mobile applications is improved, which typically results in intuitive handling and thus increases user acceptance.

In general, together we can now significantly expand our portfolio and offer seamless one-stop solutions, from access control at the car park to access control at the main entrance, lift, locker and office door, from cashless payment in the canteen and kiosk to booking, payment and access control in leisure facilities – to use the aforementioned example once again.

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www.saltosystems.com

TRENDS

Equipped For Change

Assa Abloy's Stephanie Ordan discusses the future of access management

Stephanie Ordan is VP Digital and Access Solutions at Assa Abloy Opening Solutions EMEA. Here she talks with GIT SECURITY about the future of access control, and how their recently launched Incedo platform-based access management solution will meet the rapidly changing landscape.

GIT SECURITY: Ms. Ordan, what major forces do you see affecting the access control market in the next few years?

Stephanie Ordan: We are on the brink of a significant change in access control. In fact, change beyond access control. It is becoming ever less useful, from a forward-looking perspective, to talk about building management functions in isolation. Rapid urbanization and technological change mean that systems are being used simultaneously, every day, and often with unnecessary duplicated administrator workload across platforms.

As a manufacturer and leader in the EMEA security market for many years, our challenge is to develop solutions that create a seamless experience for security managers and building users. So providing intelligent, seamless solutions that are designed to meet the changing needs of our customers is critical in this fast-moving environment.

It is forecast by the analysts Tech Navio that the demand for Access Control as a Service (ACaaS) will grow at 22% annually through 2022. Technologies like wireless locking and secure mobile keys on a smartphone have now become

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Incedo Business provides flexible access control to meet the changing needs of the fast-moving environment

Incedo is a universal ecosystem combining software and hardware into one agile environment

mainstream and make electronic access control increasingly attractive to small and medium-sized businesses.

How would you define a smart building that provides a seamless experience?

Stephanie Ordan: A smart building needs an ecosystem where data flows in every direction. Intelligent analytics track usage, the environment and other data to make better, automated decisions in real time.

The way we live, work and move is continually evolving. At Assa Abloy Opening Solutions EMEA, we understand that when it comes to securing your doors and spaces, adapting to diversity is everything. Flexibility and simple scalability allow security and other building functions to facilitate the changing ways we move in and through buildings.

Smarter buildings deliver many concrete benefits. For example, commercial buildings currently waste up to half of their energy consumption. Smart energy management can help to minimize this waste. Access control has a role here because, if your building management system knows who is present, it can modify

heating or cooling systems automatically. This optimizes the thermal comfort for occupants while reducing energy consumption, cost and overall carbon footprint. This only happens when your systems are connected.

The European Council for an Energy Efficient Economy estimate that smart building technology will reduce energy use by at least 15%. Automated controls and smart software are the key ingredients. Recent research by commercial property experts JLL identified a rent premium of between 8% and 10% for smarter, more sustainable office buildings, alongside lower vacancy rates. These efficiencies go part of the way to explaining why.

You are talking about integration then. Has this been a growing trend in access control and security over many years?

Stephanie Ordan: We have been promoting the benefits of integration at Assa Abloy Opening Solutions EMEA for a long time. Our award-winning Aperio wireless locking technology, for example, is integrated with access control systems from over 100 different manufacturers.

The next generation of buildings will require us to take another big leap forward. Across multiple industries, leaders now identify 'ecosystems' as the main driver of change for their existing business models. Security is no different.

Building administrators want a single solution, available everywhere, that unites all the functions that are relevant to them: access, locking, CCTV, energy management and everything else into a single, powerful, flexible software environment. The latest access control software report from Omdia Technology says: "Access control software will play a critical role … for future innovation". Our new Incedo ecosystem is the logical step: its first iteration for commercial businesses is called Incedo Business.

Incedo is a universal ecosystem combining software and hardware into one agile environment. An environment powered by data, connectivity and seamless integration, across secure, connected access points and intelligent identification technologies, and across the doors and spaces we use every day.

Despite the extraordinary shared global experience of early 2020, ours will

continue to be an age of ceaseless, evolving movement. Our systems must move with it, given that access control is what makes the movement of people safe and convenient. Every end user who touches Incedo, even if they never know it, will enjoy easier access and more flexible security in their everyday lives. We can advance, change, evolve and move, together.

The Incedo launch is clearly a big step for Assa Abloy Opening Solutions EMEA. How does the new system work?

Stephanie Ordan: Incedo is an ecosystem based on a true platform. This will be the place where you combine and manage all the electronic security devices and systems within your building. It is modular, making it flexible and easily scalable in any direction.

You pick the most suitable options from a growing range of Incedo-enabled security and access control hardware. Trusted, award-winning Assa Abloy wireless digital locks and wired Assa Abloy wall readers secure the interior and exterior doors. Also already available is a choice of card and token credentials that helps users to enjoy safe and convenient access to, and movement around, your premises. Incedo mobile keys let you open doors securely with a smartphone.

Incedo's system management options — Lite, Plus and Cloud — run from entry level up to cloud-based administration. You can manage multiple sites and third-party integrations, including CCTV, when these options become available. You can scale up and down, add or remove hardware and credentials on demand or switch system management options, all within a single environment. Migration between Lite, Plus and Cloud options is always seamless in any direction, ensuring flexibility and peace of mind.

Can you tell us a little more about what both your new and your old customers should expect when they adopt Incedo Business?

Stephanie Ordan: Incedo makes workflows more efficient for everyone, from installers to end users. Facility managers enjoy more control and flexibility than they ever imagined possible — with Incedo Business you are able to scale on demand. System administrators can do more within limited budgets: initiating, cancelling or amending access profiles, and monitoring movement around a site in real time. You will never need to re-train, because Incedo keeps adapting to your changing needs. Building users, meanwhile, get the individual access times and entry permissions they need.

They move freely without compromising the security of other people or equipment.

Integrators can upgrade technologies and systems quickly, minimizing risk and meeting customers' raised expectations from modern technology. Incedo's open API makes customization straightforward, and installers no longer wrestle with incompatible systems. Easy interoperability is built into Incedo, meaning no more delays or unnecessary complexity.

This launch is just the first step. Our Incedo ecosystem embraces connectivity by design, it's not a question of bolting on upgrades or integrating functions as we go. Incedo will soon incorporate software solutions designed specifically for key verticals, including education and healthcare. This is an incredibly versatile new platform that puts flexible, powerful, future-proof security at the heart of every building and business.

Combined Video Surveillance and Access Control

The integration developed between Vanderbilt's ACT Enterprise access control software platform and Hanwha Techwin's Wisenet Wave video management software (VMS) means operators are now able to instantly visually verify access control activity and events directly from ACT Enterprise. ACT Enterprise is a role-based software platform that streamlines the monitoring and management of ACT pro access control systems comprising web-enabled door controller interfaces and MiFare and/or DESfire card readers. The integration removes the need for control room operators to use two separate software platforms to visually verify access control events. Instead, operators are able to conveniently view live streams or recorded video associated with a door directly in ACT Enterprise. If, for example, a door has been forced open, an operator can simply right-click on the event listed in ACT Enterprise, to immediately replay the relevant recorded video made available by Wisenet WAVE. **www.hanwha-security.eu**

Large-Screen 4K UHD Monitor

Eizo has released a 57.5-inch 8-megapixel color monitor named Radiforce LL580W for cost-effective hybrid OR and interventional radiology usage. This 4K UHD (3840 x 2160 pixel) widescreen monitor is ideal for displaying medical images from angiography, cardiology and conventional radiology, wall or ceiling mounted. It has factory-calibrated brightness and color temperature for comfortable viewing in operating rooms. The integrated stability system maintains the monitor calibration and ensures that its visual impressions remain consistent over time. **www.eizoglobal.com**

Four Modules in One Camera

Mobotix has significantly expanded their camera platform with the S74 video system, an IoT camera that includes up to four modules. With a concealed camera housing, the camera is very discreet – only the modules in the various mounts are visible. Equipped with connection cables up to three meters long, these optical, thermal and functional modules can be placed anywhere and can be connected simultaneously in several directions, around corners or in different rooms - inside and outside. The S74 can also access already integrated camera apps. In addition to the 4K UHD modules available in numerous lens opening angles, the S74 has an ultra-low light 4MP day and night sensor module with automatic day/night switching. **www.mobotix.com**

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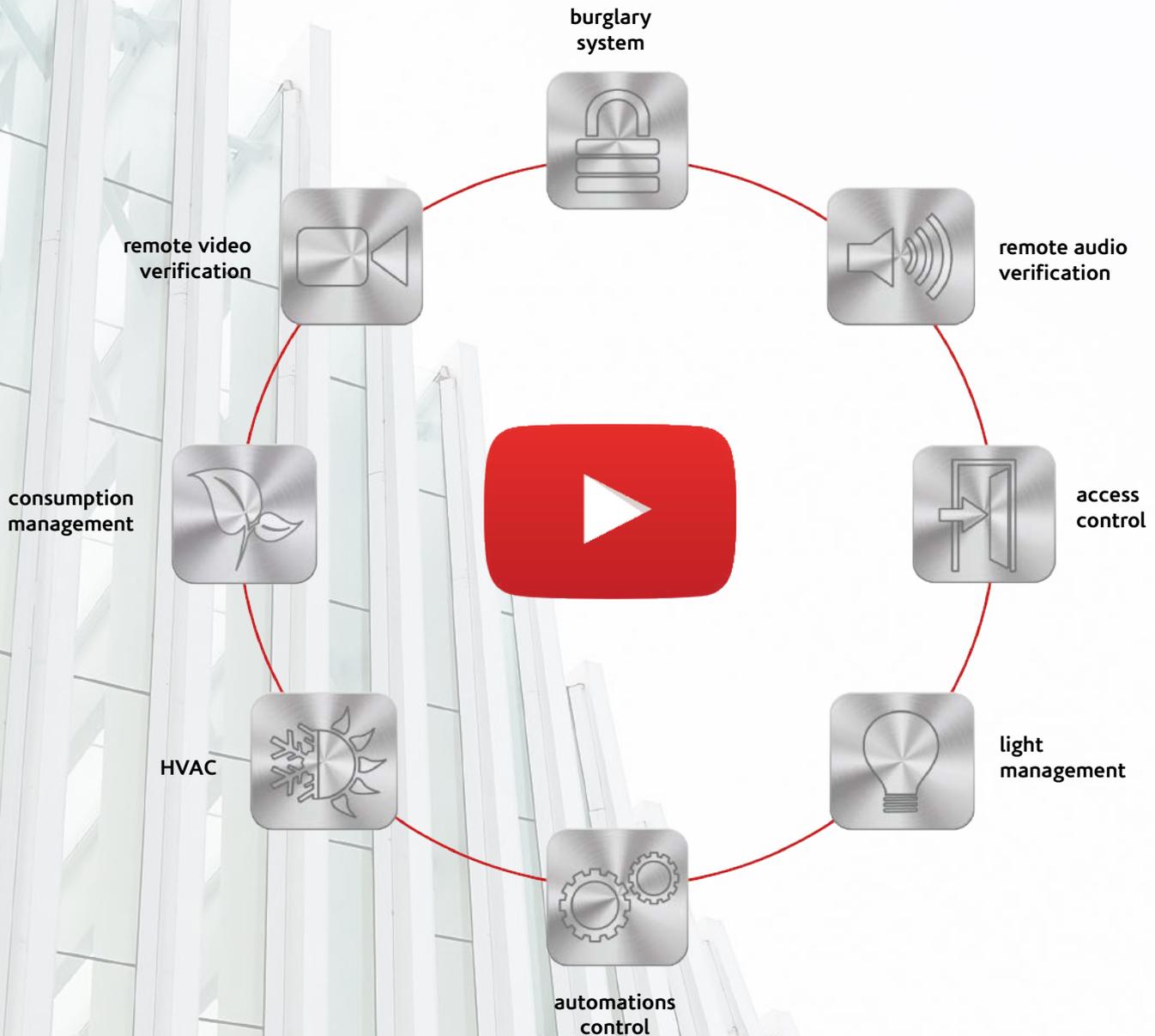
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The new dimension of Security

GIT SECURITY AWARD 2021 – The Winners

Especially in these times one should be happy about the beautiful things. For example the GIT SECURITY AWARD. The winners for 2021 have been confirmed. Here are the top three products in all categories.

GIT SECURITY AWARD 2021 WINNER

WILEY

Category A

IT Security and Safety for Automation, Cyber Security

1. Winner

Euchner: CTM

Transponder-Coded Guard Locking Device

The new transponder-coded CTM guard locking device has been specially developed for use on small flaps and lightweight doors on packaging machines and is particularly impressive due to its small dimensions. It is one of the smallest guard locking devices on the worldwide market and provides process and personnel protection in the smallest of spaces. The guard locking device can be integrated almost invisibly into machines, providing design engineers with greater freedom. Despite its compact design, the CTM has a locking force of 1000 N and offers reliable safety door protection in accordance with Cat. 4/PL e as per EN ISO 13849-1 (highest protection class IP69). The CTM is also available as a hygienic variant and offers future-proofing in terms of Industry 4.0 thanks to intelligent communication capabilities.

2. Winner

Moxa Europe:

Intrusion Prevention System (IPS)
Cyber Security Solution for OT and IT

In order to ensure that network activity on industrial networks is authorized, Moxa's industrial cybersecurity solution allows to define granular access controls at different levels. One can define a whitelist of devices and IP ports that are allowed to access all or part of the entire network. In addition, one can also define the authorized protocol format to prevent unauthorized commands from passing through the industrial IPS or firewalls. Furthermore, OT engineers can even define which control commands can pass through the network to reduce human error associated with sending a wrong control command. In addition, the IPS provides virtual patching of vulnerabilities for operating systems, application software, and industrial equipment such as PLCs.

3. Winner

ABB Stotz Kontakt: HD5

Three-stage Enabling Device

The new three-stage HD5 Enabling Device offers maximum safety with extraordinary flexibility and perfect ergonomics. The optional emergency stop, the integrated flashlight and a motion sensor provide additional functions and optimum safety for the operator. Freely programmable control and signal elements for visual and haptic feedback allow for individual and customized use. Furthermore, the housing complies with the guidelines of "hygienic design" and is made of the highest quality materials. This ensures functionality also in demanding application environments. HD5 complies with protection class IP65 and has received CE, TÜV-Süd and cULus approvals.

Category B

Fire and Explosion Protection, Industrial Safety

Securiton: SecuriRAS ASD
Aspirating Smoke Detector

The SecuriRAS ASD model family offers the right aspirating smoke detector for every application and allows scalable use in addition to high-sensitivity fire detection. The SecuriRAS ASD 535 monitors areas of up to 5,600 m². It features one of the most powerful fans available on the market and is suitable for use in large halls, cleanrooms and frozen storage warehouses. The compact SecuriRAS ASD 532 device, on the other hand, is used in lift shafts or IT racks. The alarm series also includes a heavy-duty version, which is designed for harsh environments. The electronics can withstand aggressive fumes or chlorine gas thanks to a protective coating. The smoke particle measurement sensitivity can be selected between a minimum of 0.002%/m and a maximum of 10%/m on all devices. In addition, a comprehensive range of accessories completes the ASD family: various sampling pipes made from PVC, ABS or copper, dust filters, water extractors etc.

1. Winner

Ejendals: Jalas
Safety Shoes

The high-tech foot protection from the Swedish brand manufacturer Ejendals is the "snow chain for work shoes" and has advantages in terms of grip, stability, running speed and risk of slipping away. Slippery soil, icy surfaces and smooth ground have high potential for accidents. With its foot protection series Jalas Heavy Duty, Ejendals has created a first in occupational safety: The boots and half boots combine the protective properties of a comfortable safety shoe with vibram, highly professional extreme soles.
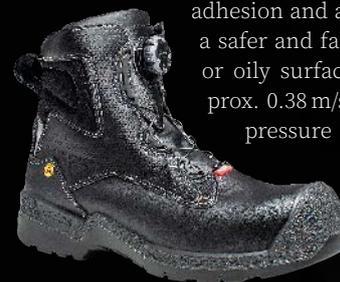
The Vibram Artic Grip sole convinces with ground adhesion and abrasion. The wearer also achieves a safer and faster walking speed on smooth, icy or oily surfaces (conventional safety shoes approx. 0.38 m/s; Ejendals products 1.00 m/s). The pressure measurements showed a load of 27 kg (10 kg standard shoes). Further advantages are ankle supports, shock absorption and ergonomic shape.

2. Winner

Denios: SpillGuard
Hazardous Leak Recognition System

SpillGuard is a leak recognition system for hazardous liquids. The system operates fully autonomous and fits into any type of spill pallet. It can detect every hazardous liquid with a sensor underneath the device and is classified for ATEX zone 1.

It is easy to install – it just needs to be placed on the deepest spot of a spill pallet and activated by the push of a button. A visual and audible alarm signal is created as soon as the sensor detects any kind of liquid and will last for a minimum of 24 hours. It can be turned off by pushing the button on it. The battery has a lifetime up to 5 years and the device has a highly resistant and electrically conductive housing to ensure a longtime use.

SpillGuard is a leakage sensor which alarms acoustically and optically when a hazardous substance is detected. It helps to react in time in case of leakages of hazardous substances and to avoid high follow-up costs for elimination and damage to the environment.

3. Winner

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Category C
Video Security Systems (VSS)

Mobotix: M73
High Performance IoT-Camera

The Mobotix M73 is a decentralized, cybersecure and modular video surveillance system of the very latest generation. Based on the Mobotix 7 system platform, the M73 owner benefits from many AI-based applications already integrated into the camera firmware. With individually combinable 4K image sensor modules and function modules, the M73 can be adapted to any application. The M73 is designed for maximum robustness on both the hardware and software side and has a weatherproof camera housing. One or two optical sensor modules can be used with one M73. In addition, the M73 supports the video codecs H.264, H.265, MxPEG+ and MJPEG, triple streaming and interoperability with ONVIF Profile S and T. As a decentralized edge camera, the M73 offers relevant system advantages: In principle, no video server is required. This makes a pure Mobotix solution particularly easy to scale and saves time and work when installing and maintaining the video system.

1. Winner

Dallmeier Electronic: Panomera S
Surveillance Camera

The new Panomera S integrates up to eight sensors in one camera system. The patented software guarantees a precisely definable minimum resolution density, thus significantly reducing the number of screens and eliminating the need for additional PTZ systems. These are basic requirements for court usability, overview and analysis. The result is a much better control over even the largest spatial contexts, predictable data quality for analysis and a much smaller number of systems required. The latest generation is a completely new development which, in addition to an innovative design, features an intelligent housing concept with advantages in thermal and mechanical resistance. Both long distances and large areas can thus be covered with a precisely defined resolution density.

2. Winner

3. Winner

Abus Security Center: WLAN Akku Cam
Wi-Fi Camera

With the wireless and weatherproof (protection class IP65) Wi-Fi Battery Cam, Abus provides the perfect solution for flexible and convenient video surveillance of premises, pets or inside rooms. A long-life battery inside the camera for up to 13 months battery life and a base station that amplifies the Wi-Fi signal for connection to the router mean that the battery camera can be installed wirelessly and in almost any location. The camera transfers images to the base station in encrypted format and stores them locally and securely without the need for any cloud service. In addition, a high-quality Sony chip with a low-light function provides clear colour pictures day and night. The camera has a landscape format design, which makes it ideal for mounting under canopies and eaves. The base station can be attached to any power outlet with Wi-Fi reception in the house securing the data on an SD card protected inside the house.

Category D

Access Control, Intruder Alarm, Perimeter Security

1. Winner

PCS Systemtechnik: Intus 1600PS-II
Hand Vein Access Terminal

Intus 1600PS-II is a convenient and highly secure biometric access terminal that recognizes persons based on the pattern of their hand veins. Primarily developed for the protection of high-security areas, it also masters the use in comfort applications. It focuses on the security of all system components. The templates are encrypted while still in the sensor and the terminal then transmits this data via secure lines to the protected area. The sabotage contact detects any manipulation of the terminal. Multifactor Authentication ensures maximum security during recognition. The new version also detects people with shaky hands and operates in direct sunlight up to 80,000 Lux. The uniqueness and innovation lie in the combination of the highly sensitive sensor technology, which enables highly secure access control for rooms that are particularly worth protecting, with simplified application that offers the user a high level of user comfort.

3. Winner

Cias: Micro-Ray 100MT
Linear Microwave Barrier

Micro-Ray is a barrier with MW rays for outdoor perimeter protection in any kind of environments. Especially developed for protection in very narrow corridors, it's capable to generate in the same tower up to 4 rays creating a linear sensitive zone with 40 cm diameter all along the 100 mt range, with very advanced anti-intrusion detection performance. This extends the possibility of application of microwave technology beyond the actual installation rules. Reliability of microwave can now be used even in the narrower spaces, where typically active IR technology is used, by-passing limitations of this technology. Suitable for any security application, it's IP ready and integrable with major CCTV and Access control platforms. Micro-Ray uses a revolutionary kind of microwave antenna, able to produce a very narrow linear detection zone, which works along with Cias Fuzzy Logic algorithms for the best performances of detection.

2. Winner

Salto: XS4 Locker BLE
Electronic Locker Lock

By incorporating BLE (Bluetooth Low Energy) technology into their latest electronic locker lock, Salto has delivered a product that extends up-to-date comprehensive electronic access control to lockers, cabinets, and essentially anywhere on the peripheral. The new XS4 Locker with BLE technology drives manageability, creates a flexible and safe storage service environment, and enables users to have what they need at the touch of a mobile app or smartphone, wherever they are. The locker lock is fully integrated into the Salto Space platform and is also compatible with Salto KS Keys as a Service cloud-based access control. The XS4 Locker BLE is an ergonomic design based on the same housing and mechanical mechanisms of the original version and provides operators with real-time wireless control, configurable opening modes for users, updating credentials, blacklist transmission and automatic audit trail collection and battery status.

NOTE: There were an equal number of votes for Cias and Dormakaba, therefore we awarded two winners on 3rd place.

3. Winner

Dormakaba: evolo smart 2.0
Smart Access Solution

The comfortable access solution dormakaba evolo smart is a free app that offers simple key management for private households or small businesses. The smartphone is used to determine who gets access and when, and programs the electronic door components from Dormakaba. The user opens the doors with a smartphone, ID card or a key fob. If an access medium is lost, it is deleted from the door with the app. For access with the smartphone, a digital key can be sent virtually to new users via the app. The user determines who is allowed to open a door at what time or not. All authorized keys are stored on a digital locking cylinder from dormakaba. This can be replaced with the existing locking cylinder in the door in just a few steps and the smart door is immediately a reality. Cabling is not necessary.

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Category E

Safety and Security Management, Services and Solutions

Hanwha Techwin Europe: Wisenet Serverless ANPR
ANPR Set

The easy to configure camera-to-camera IP communication technology enables up to 4 Wisenet ANPR (Automatic Number Plate Recognition) cameras, 1 master camera and 3 slaves, to simultaneously capture and transmit data to a convenient user interface. Thanks to its powerful chipset, the easily configurable, serverless ANPR solution can capture license plates of vehicles at speeds of up to 50 km/h with 95 % accuracy. Besides the monitoring of parking lots, gas stations or even small housing estates with several entrances and exits, Wisenet Serverless ANPR can also be used to collect valuable information for parking lot management administration like dwell time or occupancy. To enable the ANPR solution to interact with third-party software and systems, an application programming interface (API) is also available.
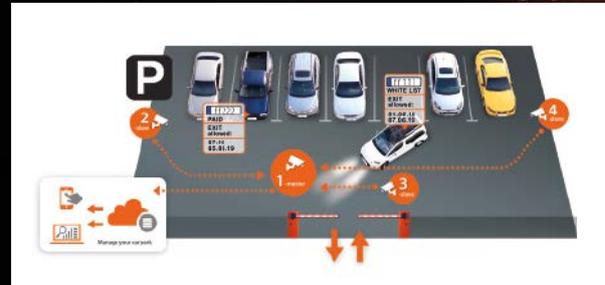
Axis Communications: Body Worn Solution
Bodycam System

The brand new Axis Body Worn Solution includes the camera itself, the camera docking station (8 or 1 bay) and the system control. The camera records video at up to 1080p, 30 frames per second and audio via dual microphones with noise reduction. In addition, Wide Dynamic Range technology is used to ensure consistent image quality even under the most demanding lighting conditions. The system control provides a central integration and management point and allows for fast, reliable outsourcing of video (100 MBit per camera). All data is encrypted with AES256 and TLS both during storage and transmission.

vi2vi: viGate
**Fever Measurement
via Thermal Imaging**

The viGate is designed as a checkpoint to minimize the risk for visitors and employees. The thermal camera can measure the object temperature with high accuracy in real time and detect persons with a higher face temperature. For flexible use, the handheld device provides optimal support. The truss construction as "One Stand" or bridge construction realizes a real gate. Different camera modules can be selected for fever measurement. The system includes a cable management system for trip-free installation of supply cables, a mobile separation system, a queueing system, an optical and acoustic alarm and message module, network-based analysis and interaction software and counting sensors.
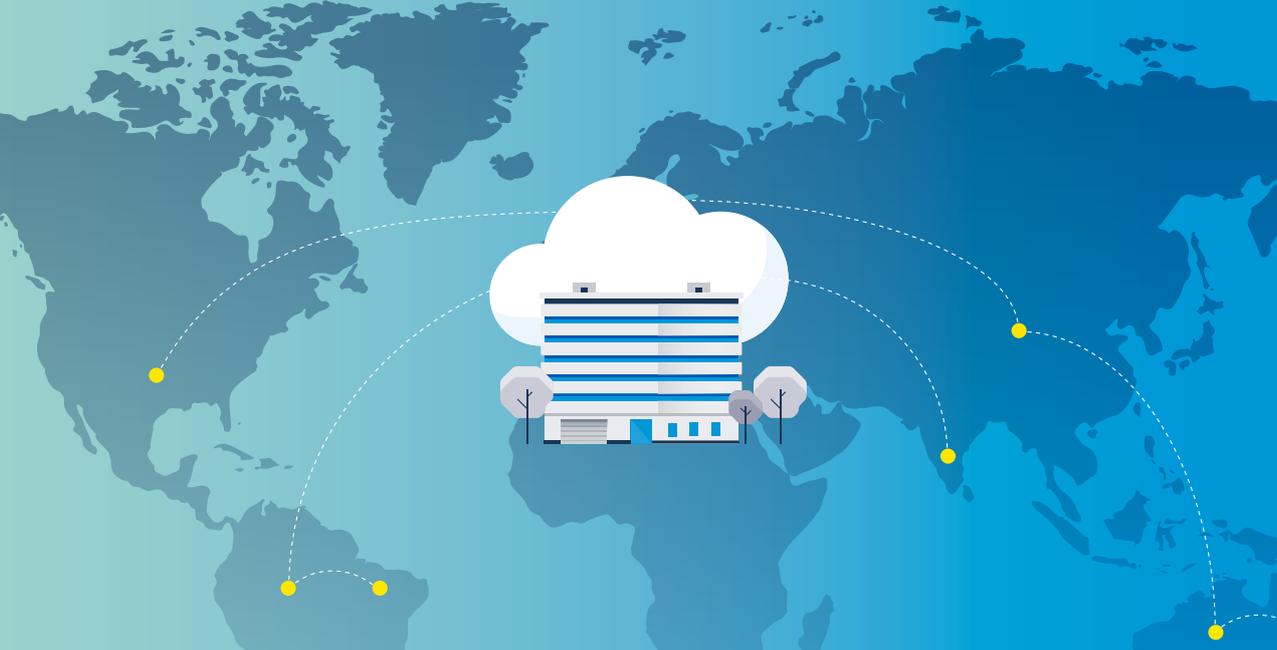
FUNCTIONALITY MEETS SCALABILITY

XProtect© + Arcules

A flexible hybrid video surveillance solution for fast deployment of remote sites. Cut down on IT resources, downtime and up-front hardware investments and centralize your video surveillance operation with this feature-rich solution.

A POWERFUL HYBRID SOLUTION

Scan to learn more or book a demo

XProtect on-premise video management software integrated with Arcules Video Surveillance as a Service, delivers a hybrid solution ideal for organizations looking to centralize their remote video surveillance operation – while gaining uniform access to live video, recordings and alarms across all cameras and sites connected physically or virtually.

COVER STORY

Ready for IoT

Bosch and S&ST Count on Open Platforms as Driver of Innovation

GIT SECURITY spoke with Tanja Rückert, CEO Bosch Building Technologies, and Hartmut Schaper, CEO Security & Safety Things (S&ST) about the trend towards collaboration with other manufacturers, 'thinking buildings' and security cameras that work like a smartphone.

Tanja Rückert,
CEO Bosch
Building Technologies

GIT SECURITY: Ms. Rückert, when you started with Bosch for the Building Technologies division, you were known as an IoT expert focused on driving forward and implementing the strategy of connectivity. In what situation do you see Bosch Building Technologies today?

Tanja Rückert: We have already been successful making the life of our users safer, more convenient and more efficient through the 'network of technology' powered through connectivity. As an example, I am talking here about our solution that combines the fire alarm and the evacuation systems and ensures that everything runs smoothly when every second counts. Or we could take the integrated solution of access control and video systems that makes it possible to enter a building simply, securely, and contact-free. The fact that we can access our systems remotely and that they report on their operational status – keywords 'Remote Services' and 'Predictive Maintenance' – are very good examples that demonstrate that connectivity is an integral part of our portfolio.

But the subject of connectivity must be thought through further, so at Bosch we speak of 'AIoT', which is the connectivity of physical products and the application of artificial intelligence. This enables us to ask completely new questions and to

solve problems. An example is our VdS-certified video-based Aviotec fire detection system, which enables us to detect incipient fires much faster than would be possible with a conventional fire detector, thanks to its intelligent algorithms. In its latest version, Aviotec can reliably detect smoke and flames through its infrared sensitivity, even at 0 Lux – that is total darkness. Our numerous connected solutions are taking us generally in the direction of the 'automated building'. If we look even further into the future, we will have 'thinking buildings' that adapt to our individual needs and connect with each other.

How would this future actually look, Ms. Rückert?

Tanja Rückert: I can well imagine the following scenarios: privately, your car will drive you to your chosen destination autonomously, whether it is a hospital, a shopping mall, an office or a factory. The building already knows that you are on the way and prepares itself for your arrival. As soon as you leave your car, it parks itself automatically, the doors to the building open for you and the elevator is already waiting to bring you to the right floor. The same applies to production systems that adapt to the needs of the respective production process through intelligent connectivity. Data analysis can lead to a significant reduction in energy consumption, for example by generating less compressed air when less is needed, or by using less heating when the machines produce more waste heat.

**How far are we along this road already?**

Tanja Rückert: In general, I believe that it is often overestimated what can be achieved within a year, and often underestimated how much can be achieved in five years. Bosch is already successfully implementing future-oriented technologies in

the present day. But to stay with the future scenarios mentioned above, Bosch has recently started a pilot project together with Mercedes-Benz and Apcoa in a multi-storey car park at Stuttgart airport in which fully automatic and driverless parking is being tested in practice. An intelligent camera infrastructure from Bosch Building Technologies is being used for the so-called 'Automated Valet Parking', abbr. AVP. The cameras can identify vacant parking spaces, monitor the driving aisle and detect obstacles or people in the aisle so that a car can be controlled without a

driver. There is an impressive video available showing this. We at Bosch are already building this future solution.

With regard to the increasing connectivity that you mentioned, are manufacturer-specific products still relevant or do you see the future in open platforms?

Tanja Rückert: In my opinion, the era of manufacturer-specific solutions is over. Open ecosystems that bring hardware manufacturers, software developers, integrators, planners, consultants, users
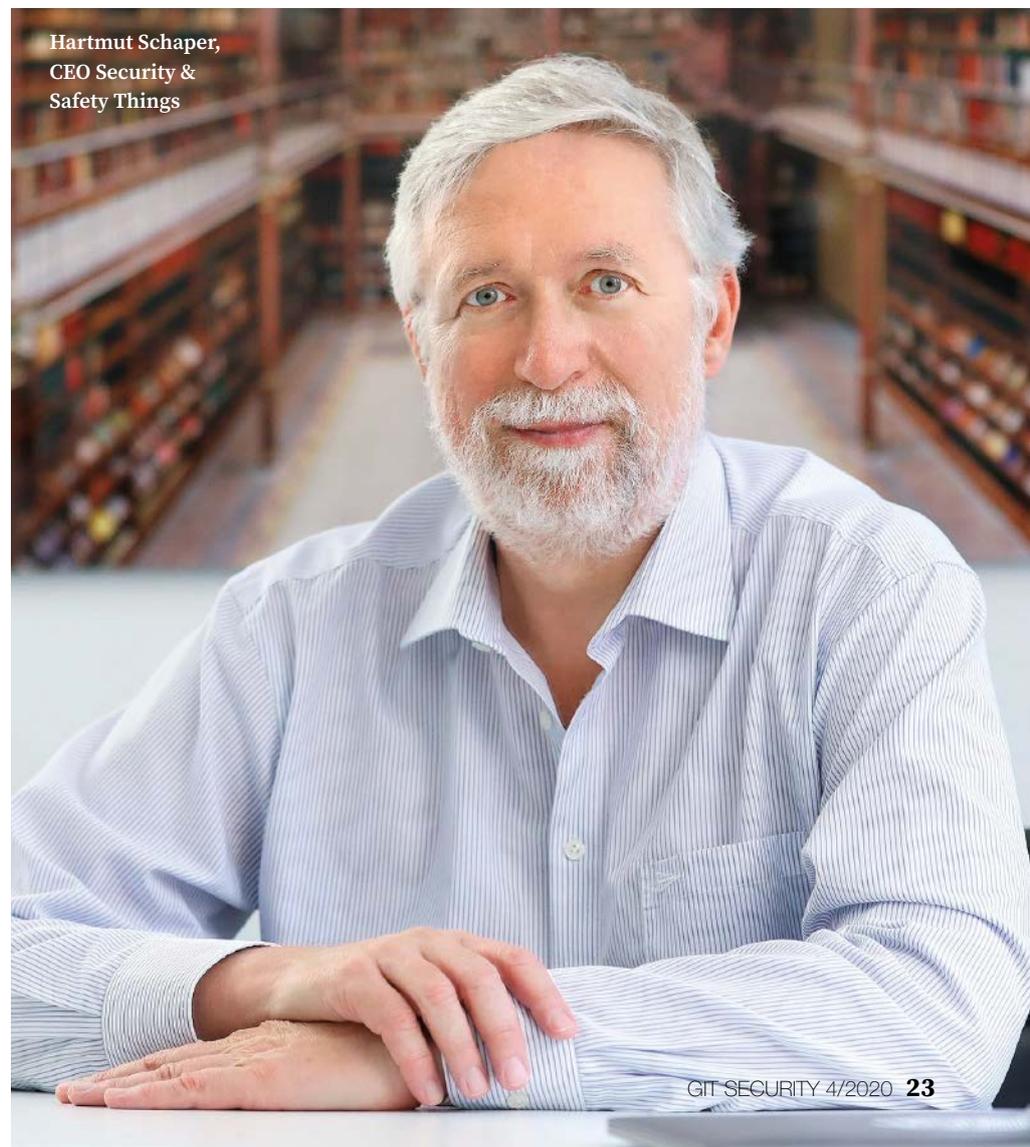
Hartmut Schaper,
CEO Security &
Safety Things

and others together are much more flexible and bring great advantages for everyone: Together we can simply achieve more than each one of us alone! We can offer suitable solutions for the needs of our customers much faster on the grounds of open platforms, and naturally also optimize and individualize them together with our customers. But differentiating features will remain. For the Bosch video systems unit, this means that we will continue focusing on security and trust as well as on built-in artificial intelligence. Having AI 'at the edge', that means in the end device, will continue to distinguish our products significantly from those of other providers now and in the future. In the case of video data, this is often critical and sensitive information so we will follow a systematic approach to maximize data security. An important component is that the data is being already encrypted at the hardware level. The corresponding key for this is securely stored in a unique integrated 'Trusted Platform Module', abbr. TPM, or 'Secure Element'.

You founded the Open Security & Safety Alliance (OSSA) together with other leading companies from the video security industry to develop standards and specifications for IoT applications in security technology. Ms. Rückert, how successful has this been so far?

Tanja Rückert: Together with our partners in video security, we have defined standards and specifications for an open camera platform concept within the framework of the vendor-independent Open Security & Safety Alliance. To date, a whole row of well-known camera manufacturers have joined, from whom many already have 'Driven by OSSA' products on the market or will be releasing them soon. Other industry members, in particular system integrators, are interested in this ecosystem and have joined

up. At the same time, this open system alliance is now expanding its scope beyond the area of video security and is already in advanced talks on this. All in all, this has currently led to some 40 leading companies working together in OSSA to drive forward innovation in the security industry – way beyond the limits of each individual organization.

Hartmut Schaper: We at Security & Safety Things GmbH, abbr. S&ST, have developed an open operating system on the basis of the OSSA standards, make it available to the manufacturers taking part, set up an Application Store and provide a comprehensive software infrastructure for the ecosystem. Customers and integrators can purchase software applications for various purposes and industries there and load them onto cameras that use the S&ST operating system. This works in a similar way as apps on smartphones.

Mr. Schaper, what does this idea from S&ST bring for end users?

Hartmut Schaper: There are three main points to mention here. First, dependence on particular hardware and software is being reduced as supported cameras can be flexibly equipped with software apps for various video analytics use cases via our Application Store, just like you can let your smartphone do different jobs by installing multiple apps on it.

Secondly, every camera that uses our operating system can run more than one application in parallel. In the past, customers have mostly needed one video analysis application for each type of camera, whereas now they can run various applications in parallel on one device. For example, 'License Plate Recognition' can be combined simply with the automatic recognition of the vehicle color and the model in order to allow more comprehensive and deeper analysis.

Thirdly, and probably most importantly, these cameras can be equipped with new apps at any time and thus be made more powerful or used for totally different purposes. One has the flexibility to adapt the function of a camera over its lifetime through its applications to best fulfill its specific purpose.

How does that look in practice?

Hartmut Schaper: Let's take an example scenario with a direct link to the pandemic: say, an electronics shop purchases several cameras with our operating system. Before the pandemic starts, they install some cameras at the entrance to count the number of customers coming in. Others are equipped either by them or the integrator to analyze customer traffic in the shop and simultaneously report empty shelves that need filling. Other cameras are set up so that they recognize potential theft or accidents, such as someone falling over, and report these to the staff. As new health directives come into force because of the pandemic, the customer can now quickly adapt their cameras at the entrances through the Application Store so that on top of counting people, they can now also check for facemasks being worn. Cameras above the sales area can be equipped with apps that now recognize the formation of groups and alert the staff.

It is worth mentioning that the number of available apps in the Application Store is growing continuously. Even if a needed application is not yet available, it can be developed and made available within weeks, depending on its complexity. In such cases we also mediate between app developers, integrators and end customers, in particular if it is an application that could be useful for other customers. Our development partners are very interested to develop for our platform, and thereby for a global clientèle. And that is exactly why we are convinced that ever more

applications will become available in the future within ever shorter periods of time.

Bosch Building Technologies is one of the partners that already works with the operating system from S&ST. Will all Bosch cameras be equipped with this in the future and be able to use the apps?

Tanja Rückert: We have just developed our 'Inteox' Bosch camera platform. As a completely open camera platform, it combines Bosch intelligent video analytics with the open operating system from S&ST. This gives our customers access to the S&ST Application Store and correspondingly the ability to add software applications as required. We are already implementing pilot projects with some of our key customers in order to gain more real-life experience. For a start, the moving Inteox cameras, that is Mic and Autodome, and early next year the fixed cameras, the Dinion and Flexidome, will be offered to meet the different requirements of our customers.

For which target group of resellers and users is the Inteox intended and which applications are already available?

Tanja Rückert: Thanks to the constantly growing variety of software applications in the Application Store, Bosch integrators can respond to customer requirements in projects much more flexibly than before. If there are special requirements when installing the cameras that are not covered as standard, the corresponding software application can be made available via the Application Store or we can even bring in our software partners to develop a suitable solution for very special needs. For example in the entrance area, as Mr. Schaper explained, where we can combine multiple apps with our intelligent video analytics as required. Our Inteox range enables us to approach a much wider range of users than before.

How are your open operating system and the Application Store developing, Mr. Schaper?

Hartmut Schaper: More than 30 app development companies have already produced more than 70 apps for cameras that use our operating system – making our Application Store the fastest growing marketplace for camera apps. We can currently offer these in 19 countries and will add more next year. Together with the cameras that are already available or expected his year from seven manufacturers, it is evident that the market has bought into the idea of our platform. In fact, cameras with corresponding apps are already being used by customers delivering value, for example in the context of 'Retail Analytics' or 'Parking Management', to mention two concrete application examples.

In the next step we would like to extend our ecosystem and on-board new partners. And since we consider ourselves a platform for innovation, we will always be looking for exciting new areas of application for AI enabled video analytics. This will often go beyond the traditional domains of security and safety. We can envisage applications in totally new areas, such as in manufacturing, healthcare or agriculture or by improving the spectator experience in the area of sport or entertainment. In such areas edge based analytics can provide innovative AI solutions while at the same time protecting privacy in a much better way.

Tanja Rückert: The analysis of data in the device 'at the edge' that Mr. Schaper mentioned is supported by us wholeheartedly. This technology has already been in use at Bosch Building Technologies for some years in all of our cameras as standard and is being used successfully by our customers. But we also offer cloud-based analytics, depending on the particular purpose and requirements of the customer.

Ms. Rückert, what is your formula for success in reaching the right ratio of differentiation and system openness in competition for market share?

Tanja Rückert: The cake is large enough for all of us. It will become even larger with common standards and a continuously growing number of attractive solutions because we are not only creating significant added value in security, but also contributing to optimizing complex processes. Nevertheless it must still be possible for every manufacturer to differentiate its products. The standard built-in intelligent video analytics from Bosch continues to be an integral part of our Inteox cameras – and remains a key differentiator. We will also continue to maintain high standards of security in hardware and software during our product development. All this combined with an open ecosystem represents Inteox. An open ecosystem is much more attractive for the app-developer community than an individual manufacturer can ever be. That enables us to offer customers from a wide range of industries great added value – both in the area of security and beyond.

Watch How Automated Valet Parking Works
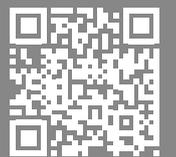
High Resolution Cameras

1. What applications are best suited for high resolution cameras?

2. What measures do you take to handle the high data volume produced by high resolution cameras?

3. Please describe one highlight of your product offering with the best performance for high resolution video surveillance?

Robert Köhler
Regional Sales Director DACH for Video Solutions, Motorola Solutions

1. Avigilon High resolution cameras are built with large spaces in mind. Typical applications include: monitor a full stadium and capture fan disruptions to help comply with mandatory government regulations, cover a full parking lot and simultaneously see license plates or cover the entire tarmac of an airport while still being able to distinguish plane numbers. High resolution cameras provide clear, sharp HD images to maximize situational awareness over a larger area while at the same time enabling detailed image capture to zoom in on critical items such as faces or license plates.

2. Unlike other systems, our patented High Definition Stream Management (HDSM) sends you only the portion of the image you need. That means you get incredible image quality and resolution with only a tiny amount of bandwidth and storage. Because HDSM manages the storage of data so intelligently, you can search through vast amounts of HD footage in just seconds. Using less data and less bandwidth means you can scale up while keeping costs down, with minimal impact on network resources.

3. The new Avigilon H5 Pro camera captures the best-in-class image details over vast areas, providing maximum coverage options through our most powerful and innovative high resolution camera yet. Up to 10K HD, it delivers stunning image detail, simultaneously providing maximum scene coverage, while minimizing bandwidth and storage consumption through our patented HDSM 2.0 technology. Built with large spaces in mind, its improved frame rate and low light performance allows for sites to be equipped with fewer cameras, while still having the ability to capture high quality live and recorded footage.

1. With the evolution in processing power and image sensors, panoramic cameras and other high-resolution cameras are now similar in performance compared to its lower resolution counterparts and now used in the vast majority of surveillance applications. The key factor is achieving broad coverage while maintaining high forensic value using as few cameras as possible, with the end result of a lower total cost for the surveillance system. High resolution cameras, and especially panoramic cameras, can in many situations provide the same coverage as multiple lower resolution cameras while reducing the overall camera count.

2. High data volumes impact both storage and the network infrastructure. A combination of the introduction of Axis Zipstream in 2015, decreasing price per terabyte for storage, and increasing performance in networks, issues with high bandwidth and storage needs are decreasing. Over time, both H.264 and H.265 have seen significant efficiency improvements from both a hardware and software perspective, and smart codecs like Axis Zipstream, also continue to evolve and reduce bandwidth further as resolution will increase over time.

3. Panoramic cameras – both single- and multi-sensor cameras. With the technology available today we are able to provide extreme resolution into a single compact camera that provides high forensic value and amazing coverage for a wide range of applications. The AXIS Multidirectional P37-series is a camera line offered from Axis, which features a combined resolution of up to 15 MP in full frame rate across two or four individual cameras heads. These are cameras which have become very popular in many segments across the world because of the reduced number of cameras needed to cover the same area in comparison to comparable multiple single-sensor models.

Olof Leidecker
Global Product Manager at Axis Communications

Uri Guterman
Head of Product &
Marketing at
Hanwha Techwin Europe

1. There was a time when most security budgets were not sufficiently large for Full HD high definition cameras to be specified for anything other than high security, mission critical video surveillance projects. Advances in technology, improved production processes and economies of scale, have enabled manufacturers such as Hanwha Techwin to offer a wide range of high-performance multi-pixel cameras, including 4K models, which are affordable for virtually any applications. This includes small offices, shops, schools, hospitals or any environment where there is a need to capture evidence grade images. Our 8K camera is most suited to airports, sports stadiums and other wide open environments as it has sufficient pixel density to enable operators to digitally zoom in to see a sharp image of just a small part of the scene.

2. Wisenet cameras offer a choice of H.265, H.264 and MJPEG compression formats to minimise the bandwidth and storage requirements of high definition cameras. Our cameras also feature WiseStream II. Unique to Hanwha Techwin, this is a complementary compression technology which dynamically controls encoding, balancing quality and compression, according to movement in the image. Bandwidth efficiency is improved by up to 75% compared to current H.264 technology when WiseStream II is combined with H.265 compression. Many Wisenet cameras also support multi-streaming, which enables images to be simultaneously transmitted at different resolutions, e.g. high resolution for recording purposes and low resolution for live viewing.

3. We are proud to have recently introduced the industry's first 8K camera. The super high-resolution capabilities of the Wisenet TNB-9000 means that large areas can be covered with sufficient pixel density and at 15 frames per second, to enable operators to digitally zoom in to see a sharp image of just a small part of the scene. It is ideal therefore for airports, sports stadiums and other wide-open environments where there is a high risk of terrorist activity, and there is a need to detect and forensically analyse any suspicious activity. The TNB-9000 is also equipped with Deep Learning AI video analytics. This simultaneously detects and classifies various object types, including people, vehicles, faces and license plates, and is able to ignore video noise, waving trees, moving clouds and animals, all of which might normally be the cause of false alarms.

1. The classic application are large areas and long distances. However, from a customer or solution view, the decisive factor is not the highest possible resolution, but a constant minimum resolution quality over the entire area or distance. A high-resolution single-sensor camera will never solve the optical core problem: In order to achieve the minimum resolution (according to DIN 62676-4) necessary for the application in the rear area, you have to waste unnecessarily much resolution in the front area. If this issue is addressed, even the largest areas can be covered with a minimum amount of camera systems.

2. We achieve this by combining up to 8 optics with different focal lengths in one system. This improves the "effective" resolution and camera efficiency many times over. In terms of data volume, this means that in normal operation – overview image and zoom observation by an operator – we only need to transfer 25% of the data volume to the client system. In addition to this, of course, H.265 and other technologies such as our Eco-Mode for integration in third-party systems and the intelligent iFrame Management are also included.

2. We take a critical view of the topic "high-resolution camera" with more and more megapixels on one sensor. Looking at the "minimum resolution" according to DIN is the better solution. A matching optical system guarantees the efficient handling of resolution, bandwidth and costs. Our Panomera-family offers a high-resolution camera here, which enables the achievement of objectives with considerably fewer systems by combining different focal lengths. With significant advantages in terms of function and total costs.

Dieter Dallmeier
Founder & CEO,
Dallmeier electronic

1. High resolution cameras provide larger coverage and richer details at the same time. For traditional standard resolution cameras, if details are to be obtained, configuration to zoom in is needed, while this greatly sacrifices the field of view (FoV). For high res cameras, by simply executing digital zoom, there can be more details while the complete broad coverage is not changed or reduced. Therefore, high resolution cameras vastly improve applications in various scenarios such as stadiums, scenic zones, plazas and parking lots, to name just a few, where clear, detailed images and wider coverage are needed.

2. For Hikvision high resolution cameras, we have taken a multitude of technologies to ensure high quality viewing with low latency, so as to enhance user experience. For example, our optimised H.265+ smart encoding technology allows to effectively compress the high data volume resulted by high resolution, greatly reducing the transmission bandwidth and storage capacity required. So video streams can be transmitted efficiently with minimum latency for preview. Another thing is about high-performance chipset which supports to process the encoding technology, at

Max Fang
Director of CCTV Products
at Hikvision

Hikvision we have the powerful DSP (digital signal processing) chip to support up-to 32MP@25fps image codecs, which ensures the processing efficiency of a large volume of data. Besides, we also incorporate the ePTZ function in the camera for smooth preview of clear images with limited bandwidth. Our Smooth Streaming technology automatically adjusts the bit rate and resolution under low-data-rate network conditions to ensure fluid viewing of live video.

3. We would like to present an Ultra-HD 32 MP Panoramic Camera, DS-2CD6984G0-IH. The camera offers impressive HD, with a maximum resolution of 8160 × 3616 pixels. Its 32 MP image resolution at 25 fps ensures smooth video image preview and playback. The camera uses four 1/2" Progressive Scan CMOS sensors to deliver a true 180 degree horizontal panorama, as well as a vertical field of view of 95 degrees. The four video images are stitched together by the camera itself, which intelligently outputs a single, seamless panoramic image. Embedded with infra-red LEDs, its low-light performance is also outstanding even in 0 lux conditions, HD panoramic video is delivered with up to a distance of 20 metres.

The Grundig brand has been around for 70 years – it is found all over the world today. One of the new products in Corona year 2020 is an IP camera. It knows when faces come into view and, for example, can measure the temperature of the person's brow. Matthias Erler of GIT SECURITY asked Ludwig Bergschneider of Abetechs (Grundig-Security) about it.

Ludwig Bergschneider,
Managing Director
Abetechs
(Grundig-Security)

VIDEO

Face and Temperature Recognition

Grundig Security is Celebrating an Anniversary – and is Still Producing Innovations

GIT SECURITY: Mr. Bergschneider, this is, so to speak, striking while the iron is hot: the IP camera to measure body temperature, and you have just introduced one. How is it being received by the market and where is the most interest coming from?

Ludwig Bergschneider: The cameras that measure body temperature are being ordered mainly from abroad. And the most demand is coming from public institutions, schools, sports facilities and industry. The cameras are frequently being installed where there is a large flow of people and other methods to measure body temperature are unsuitable. Responsible administrators want to ensure that nobody with a fever enters their building unnoticed. Having a fever is an important indicator of an acute infection.

What are the most important features?

Ludwig Bergschneider: The cameras recognize faces with the help of artificial intelligence and then measure the forehead temperature. This ensures that incorrect measurements caused by other objects are largely avoided. Depending on the camera model, the measurement can be taken at up to 9 meters away. The software that is included then passes on the information. That could be immediately by a PA announcement, a visual or audible signal, by blocking access or more discreetly by sending an email or a push-message to a cellphone. If the customer requires it, and to comply with local legal regulations, the event can be recorded and documented.

What other security-related solutions are there in your portfolio that have become more important during the pandemic?

Ludwig Bergschneider: Our unique behavior analysis capability enables many other things to be recognized in a video sequence. For example, we can detect whether a protective mask is being worn or not, or if people are maintaining distance to one another and if pre-defined limits are being exceeded, which then initiate automatic responses.

The retail industry is particularly badly hit by shutdowns, the obligation to wear a mask and other restrictions. What role can security and video technology play here?

Ludwig Bergschneider: There are industry-specific solutions available for the retail industry. For example it makes sense to monitor the body temperature of customers at shopping centers. But video technology also allows us to count and display the maximum permissible number of people in a shop at any one time. Ensuring that people wear masks is another important function. The visitor frequency and so-called heat maps can be created using modern video equipment.

How are you experiencing this pandemic? What influence has it had on the

IP cameras for measuring body temperature

security market in your opinion, and what mid-term developments do you expect from this?

Ludwig Bergschneider: At the beginning there was a lot of uncertainty for investors, also in security technology, and also concern about possible interruption of the supply chains. But demand has recovered in the meantime - the reasons to invest in security have, after all, not gone away. Projects that had already begun have also not been halted. Video technology is more innovative today than ever before. I think that this will drive the renewal of existing systems forward, and we have a positive outlook in the mid-term.

You are offering a special guarantee of 70 months at the moment for certain cameras?

Ludwig Bergschneider: Yes, Grundig is 70 years old and we are therefore giving a 70 month guarantee on our products. Our failure rates are very low, so we can build up trust and we want to set a benchmark for our industry.

What new products can we expect in the near future from Grundig?

Ludwig Bergschneider: We are continuing to combine hardware and software products that are particularly suitable for certain applications. For example, we offer our cameras with license plate recognition already on board. In the future there will be more cameras that are intended for a specific use. This makes it easier to provide industry-specific solutions.

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VIDEO SURVEILLANCE

Master Of Observation

A conversation with Dieter Dallmeier

When you think about video technology from Dallmeier, you first of all think of the multifocal technology of the 'Panomera' cameras. Very large areas and views can be covered by this technology with comparatively few cameras – and it is a significant contributor to the success of Dallmeier. The cameras and recording systems as well as all the relevant software elements are manufactured in Regensburg, Germany. GIT SECURITY spoke with the company's founder and its CEO, Dieter Dallmeier.

Dieter Dallmeier, Founder & CEO, Dallmeier electronic

GIT SECURITY: Mr Dallmeier, you state very prominently on your company's homepage that the value of a video security solution is never defined by its price…

Dieter Dallmeier: … but solely by its quality and its economics. This has been shown to be true in practice time and time again from experience gained over more than 35 years of 'video security technology made in Germany', first as an installer, then a developer and finally as a manufacturer of end-to-end solutions. It may sound like a contradiction, but the products with the lowest overall operating costs can still be developed and manufactured even in high-wage Germany.

So, the most cost-effective solutions are produced in Germany, where wages are high. Could you explain that in a little more detail?

Dieter Dallmeier: In our industry, cost efficiency is not measured by the price of a camera, for example, but by the overall operating costs I have to spend in order to meet a certain security objective. These costs become smaller in direct proportion to how intelligently you can combine the factors of quality, durability, reliability and innovative, cost-saving technology. For example, if our customers can obtain a significantly better result

than with comparable technologies by implementing a much smaller number of camera systems with our Panomera technology, then we have also delivered true added value, and specifically in a high-wage country.

What approach was responsible for Dallmeier's continuous success over more than 35 years?

Dieter Dallmeier: Constantly rethinking how we can "make things easier"! A good example is the invention of the Panomera multifocal sensor technology itself. The classic approach of 'more of the same' – that is to say more and more megapixels together with more and more PTZ cameras – evidently did not solve the fundamental problem in video security technology: the objective of getting total coverage and recording of large areas and long distances with both an image resolution that is usable for the respective purpose and a manageable number of systems. It is no good to you if you capture the incident in a tiny corner of a public square in maximum resolution with a PTZ camera while things are happening in four other places that you can observe or record with megapixel or multisensor cameras, but you can't make anything out in detail because of the insufficient resolution in precisely those background areas of the image. Or the operator has so

many monitors in front of him that it is impossible to see any context.

So, we realized very quickly: a minimum resolution for the entire scene – that is to say a minimum resolution in as many regions as possible within an area to be captured that corresponds to the purpose of surveillance – is critically important. By using up to eight individual sensors with different focal lengths in one system – hence the term "multifocal sensor" – we precisely addressed these requirements from our customers in practically all relevant industries.

But you still need certain pixel values in order to be able to recognise and identify individuals…?

Dieter Dallmeier: Exactly. The effective resolution with which a camera captures a given object in the scene is defined in DIN EN 62676-4 for video surveillance systems. The unit is "pixel density" which is expressed in pixels per metre (px/m). Accordingly, there are criteria for detecting events and processes (at least 62.5 px/m), recognizing known persons (at least 125 px/m) or identifying unknown individuals (at least 250 px/m). Of course, the resolution required is dependent upon the particular application. A World Cup football stadium like the Gazprom Arena in St. Petersburg must be captured in a different way than, say, a Safe City

Zoom areas can be selected freely

Permanent overview of the entire scene

No switching between cameras necessary

Intuitive control with Drag&Drop or joystick

Operators can open an unlimited number of detail zooms in high resolution (sensors with long focal length in the image background), the total overview is retained at all times

application for approximately 75,000 square meters in Cologne, which by the way only needs 60 Panomera systems to achieve total coverage at 250 px/m.

Of course, a guaranteed minimum resolution is only one of the most important performance indicators, not only for classic video surveillance and observation. It also ensures a guaranteed quality of data for analysis applications. After all – as with all data processing – a video analysis result can only ever be as good as its input data. This is a factor that many end users overlook all too often, and are then surprised by the poor quality of their analysis results.

To return to the economics. It would be a very rare customer who could completely ignore the costs…

Dieter Dallmeier: Costs are one part of the overall consideration. We are often asked "What does a camera like this cost?" But that is not a meaningful approach. One Panomera system replaces many traditional cameras. This has massive leverage effects on the overall operating costs: customers need fewer masts and mounting points, network components, cables, ditching, and also putting the systems into operation entails significantly less work. Then there are the savings realized during operation, because a lot less screens need to be monitored.

For installers, high quality and reduced complexity due to the smaller number of systems also translates to less maintenance and troubleshooting work. This is nothing less than an additional discount and is an outstanding instrument for strengthening customer loyalty. When paired with innovative technology this can potentially lead to substantial competitive advantages.

Would you be able to illustrate the calculation (a comparison of Panomera with other cameras) with an example?

Dieter Dallmeier: There are numerous examples of this type. In a recent Safe City project, the total of the procurement costs, that is to say for systems and infrastructure, and the cumulative operating and administration costs over five years came to a little over 1 million euros for the Dallmeier solution compared with 3.2 million euros for the alternative bid. We were recently visited at our headquarters by project managers from a US airline. They showed us figures according to which the costs of our solution came to almost exactly 50% of the competitor's alternative solution – at the same time delivering a better resolution coverage and without taking into account the savings realized during operation, due to the smaller number of monitors and less operator time needed, for example.

Entirely new perspectives and overviews can be created by combining distance/area and 180/360° systems

The sensors cover different areas of the image with different focal lengths. This enables high resolution zooms into any sub-region, also in the recording
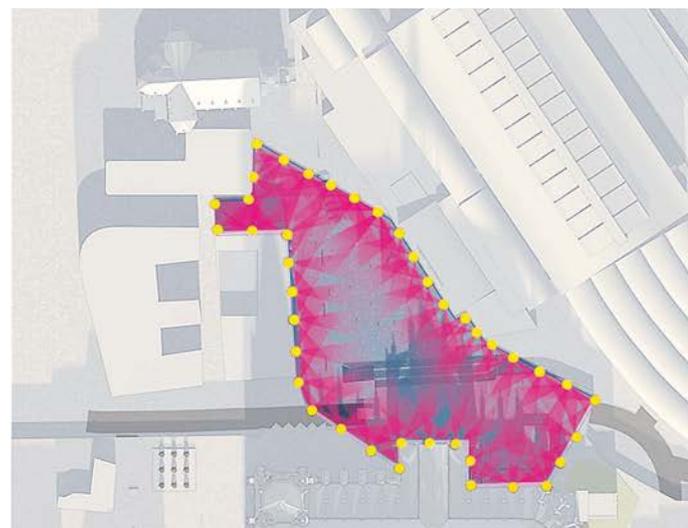
Just eight Panomera cover the 8,800 square meters of the Cologne Cathedral Square. A comparable solution is shown on the right (yellow dots are installation points for multiple camera systems)

It never ceases to amaze me how the picture changes when a genuine calculation of total costs is worked out instead of comparing the individual prices of cameras and recording systems. Incidentally, the consideration of the costs for 'security per square meter of space' is particularly illuminating. Using this calculation method, you get close to the price of a good carpet!

Let's take another look at the Panomera cameras from a more technical point of view: The market doesn't always make the clear distinction between a 'multisensor system' and a 'multifocal sensor system' …

Dieter Dallmeier: A multisensor system claims only to accommodate multiple cameras with the same focal length in a single housing in order to obtain different viewing angles from one installation point. This undoubtedly reduces infrastructure costs, but it does not enable them to meet the requirement stated earlier – that of rendering the entire area in high resolution and thereby reducing the total number of systems.

Dallmeier systems are able to do this by combining lenses of different focal lengths in one system, depending on the intended application. This demands enormous technical effort and expertise and is at the core of our patented Panomera multifocal sensor technology. It is simply not possible to attain the advantages of such a solution using conventional cameras or a multisensor system, as also confirmed by the patent. And it should be noted, only the multifocal sensor system is patentable, the multisensor system is not.

The new Panomera W camera was launched in the autumn of 2019 – GIT SECURITY reported on this. Would you kindly give us a reminder of the improvements and innovations that came with it – particularly whencapturing large surveillance spaces?

Dieter Dallmeier: There are two versions of the Panomera system. The "S-Series" for areas and distances with coverage angles from 15 to 90 degrees. By the way, we launched the third generation of this version in October 2020. And now with the Panomera W-Series, users have a system that enables the advantages of multifocal sensor technology to be applied in 180 and 360-degree situations. Here too, operators can open an unlimited number of zoom windows and enlarge detail views, while maintaining exceptional control over large spatial relationships. With a minimum resolution of, for example, 125 px/m, they can cover an area of well over 1,000 square metres with just a single system.

Over the course of the various generations of the Panomera, about 200,000 hours of research and development have now been invested in the product – from which our new flagship Panomera W has benefited in particular. The most advanced chip and encoder technologies with an AI core make it possible to keep the camera series updated to the state of the art and therefore also able to meet future analysis requirements for a very long time to come.

You have already collected two prestigious design awards for it as well. How important is this aspect for your partners and customers?

Dieter Dallmeier: Very important. Our partners and customers have confirmed this in many conversations. For a long-lived product, it is all the more important that it appears timeless even after many years and, in particular, blends unobtrusively with architecturally delicate surroundings. For example, this also includes ensuring that all cables and the like are invisible but at the same time the systems appear as standalone, attractive objects. We engaged the services of industrial designers to achieve this, and can proudly claim that we have developed a truly extraordinary design language that embraces all the different Dallmeier cameras.

This is all about being economic during planning, installation and operation, and keeping demands on the on-site infrastructure low, isn't it?

Dieter Dallmeier: Correct. Our "Mountera" mounting concept, which simplifies life for the installer with many innovations, was also born in design development. This way all our cameras can be easily installed by one-man with the 'Quicklock' system.
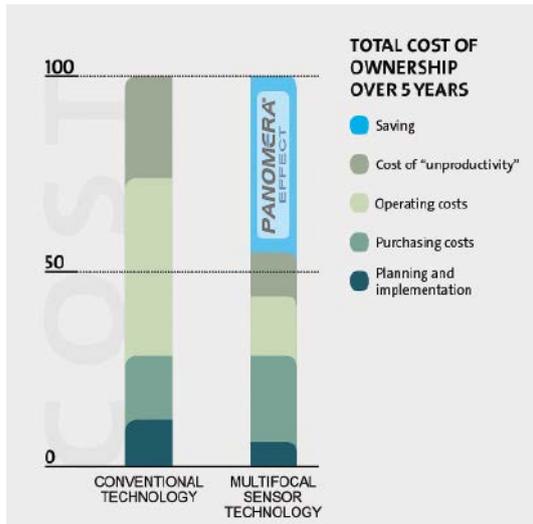
By using a much smaller number of systems, users make substantial savings on infrastructure and operating costs

A single-use handle for its part makes unpacking and handling easier at the construction site. The packaging material also serves as bubble-wrap protection while the devices are being carried around, and just one Allen key size is needed for all installation work. This reduces the installation time enormously, the 'fun factor' increases, and at the same time Mountera helps to drastically reduce costs.

Video analysis and AI are both becoming increasingly important. You were working with neural networks as early as 2001 – you develop these things yourselves in Regensburg. What are the new features that will have an impact in practice?

Dieter Dallmeier: Image quality is always synonymous with data quality for us. And this is an absolutely imperative prerequisite if we intend to be able to develop and pursue meaningful video analysis applications. Our customers reduce the number of false alarms at the perimeter these days by using AI-based object classification, they increase profitability in casinos with AI-based gaming table analysis, count people in stadiums or shorten the time needed to measure packaged goods in logistics, to name just a few examples. We are also be reorganizing and expanding our analysis portfolio in the near future. Our customers will then be able to compile the analysis functions that are relevant for them from a large number of analysis apps. And in larger installations it is important for us to consider each application case – depending on whether the analysis in the camera is sufficient or further processing should be carried out with prequalified data in separate server instances. Here too, the advantages of Panomera can again be exploited to the full, enabling users to analyze even very large spatial contexts.

At this point, we are no longer talking about just video surveillance and security, but also about the collection and use of data for process optimisation…

Dieter Dallmeier: Camera images serve as one of the simplest and smartest options to capture data from complex relationships. In this context, we often refer to them as 'optical data

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sensors'. And of course, this also opens up entirely new functionality – from the automatic 'on-the-fly' measurement of packaged items in logistics through marketing optimization in shopping centers, stadiums or casinos, up to the direction of passenger flow in airports to reduce waiting times or to increase profitability in the shopping area. In the medium term, we expect the use of video analyses to become an indispensable component of data capture, either for process optimization or for business intelligence, in almost all industries.

Could you tell us about some customers or examples of use where this is already paying dividends?

Dieter Dallmeier: I think the most impressive examples come from our customers in logistics. Our system for video-based volume measurement enables automated measurement of parcels on pallets without the need to set the parcel down or stop the movement of the conveyor. As a result, general cargo logistics personnel save up to 95% of the time they normally need for measuring, and they can offer the measurement as an extra service.

Another example is package tracking in one of the largest package shipping enterprises in the world. Here, we reduce the search time spent tracking shipments that have been lost due to theft or other reasons by as much as 80%. The proportion of shipments our customer was able to find again with this system rose to almost 100%, because our system guarantees uninterrupted tracking of shipments. As a side effect, operational data protection was actually improved substantially because video material in which people appear only has to be viewed in unequivocally justifiable cases. If it should become unavoidable, the recorded image material is usable as evidence in court, and is approved for use by the works council and the data protection officer in a semi-automated process.

'Made in Germany' is generally an important feature for Dallmeier – you even conducted a survey on the subject. What advantages does this offer, both for installers and end customers as well?

Dieter Dallmeier: According to the survey we carried out in our end customer and installer community, fully 86% of those surveyed consider that, against the background of the coronavirus crisis, 'Made in Germany' or 'Made in Europe' are more important as criteria for purchase decisions than before. But this trend was

clearly defined even before the crisis. In essence, there are three factors involved: firstly, more and more ethical questions are being raised in the public arenas of many countries about the origin of technologies. And this increasingly concerns not only the public sector. Secondly, legal and technological consistency is important. When entire product ranges of manufacturers are no longer approved for conformity testing by ONVIF for political reasons, for example. This naturally has extremely serious consequences for the businesses of the installers and end customers if – as happened recently – manufacturers of VMS systems no longer support the technical integration of cameras. And the third point – the most important in our experience – is the subject of security of course. And on this point, we have always placed the highest priority on ensuring that 90% of development and manufacturing is carried out in Germany and our commitment to the greatest possible manufacturing level. We consider it particularly important that we do not follow either OEM or ODM models. For the customer, this means that every line of software – and typically this is where security loopholes exist – originates from Dallmeier and consequently undergoes our strict quality controls with external penetration tests, etc. In addition, all our products feature extensive technical security and privacy functions, and thus comply to the highest degree with the guidelines of 'Privacy by Design' and 'Security by Design' as set forth in the GDPR.

In general, do you consider in-house development to be the best way for your company to develop new ideas and products…?

Dieter Dallmeier: Yes, as ever! As long ago as 1992, the first video sensor with digital recording served as the most convincing proof that developing and manufacturing high-quality products in Germany pays dividends, even though we were laughed at back then. The Dallmeier group was built on the strength of just one product, the digital recorder, until 2004. In 2004 we began to develop the first Dallmeier IP camera, and today we own a patented camera technology which is unique in the world. None of that would have been possible if we had not collected expertise from the most varied range of industries over many years, and most importantly retained it in the company as well. It is thanks to the enthusiasm and commitment of my employees that we have been able to make these products. We stand

for Made in Germany, and we will do everything we can to continue developing and manufacturing the best and the most secure video security technology products at our headquarters in Regensburg.

On the subject of openness: Dallmeier cameras can also be integrated into third-party systems …

Dieter Dallmeier: We have been members of ONVIF for a long time, and we have supported the standard in our cameras and recorders ever since it was formulated. This means that we can be integrated into any third-party system that supports the ONVIF standard. Even if, regrettably, misleading information to the contrary is being circulated. For example, we recently integrated Panomera successfully into the Genetec Security Center. We live our own philosophy here with regard to our customers as well: open systems and no dependencies. When special, optional features are required, we work closely with third-party providers and offer them our support.

Mr Dallmeier, the coronavirus crisis has affected different companies and industries very differently. How are you managing in this time – and how do you see the immediate and medium-term future?

Dieter Dallmeier: These are difficult times, and very few companies will survive this period without making some cuts. We have established a good reputation for ourselves in many industries all over the world. Casinos, stadiums, airports, municipalities, industrial corporations and many other sectors rely on our products, and we are already seeing an upswing in activities. The crisis also showed us how correct our strategy of keeping development and manufacturing in Germany was, and is. For the time being, we can only keep doing what we do well: work on new ideas and products, and move forward calmly, relying on our experience from the last 35 years.

Audio Management Software Upgrade

Axis Communications has announced Audio Manager Edge, a major upgrade to the embedded software management system onboard the company's network speakers. The upgraded software, developed to manage up to two hundred speakers in up to twenty zones, is suitable for small to medium sites with relatively straightforward needs. Free upgrades are available for all previously installed Axis network speakers. The network speakers from Axis are complete high-quality audio systems in a single unit that deter unwanted activity, warn off bad actors detected by security cameras, can be used live or for scheduled voice messages. The embedded software provides easy content management that allows users to mix live or pre-recorded announcements, ads, and background music. It features preconfigured rules for easy setup, configuration, and operation, and it includes straightforward scheduling for weekly content planning. **www.axis.com**

Edge Cloud Solution for Low-Bandwidth Environments

Arcules has added a new edge cloud solution to its platform that will address the changing needs of an organization's video surveillance and security data capture and storage. Businesses can store all video data locally to address low-bandwidth challenges and usage for their video management while still benefiting from the value of the company's cloud approach to remote security services. The solution uses an average of 10 Kbps (up to 50 Kbps) of Internet bandwidth per channel while recording video. This enables organizations with up to 500 cameras to operate inside limited bandwidth constraints (around 30 Mbps). Setup, management, administration and configuration are managed in the cloud, giving customers the ability to archive in the cloud and protect video evidence for forensic purposes. Video data is stored on the edge using a gateway with the ability to show both live and playback video that is locally stored video remotely via the cloud. **www.arcules.com**

Critical Infrastructures Well Protected

IPS offers Critical Infrastructure Protection, an intelligent video analytics module for real-time protection and detection of intruders in critical infrastructure applications before it is too late. With its 3-zone concept, which was patented in 1995, it recognizes suspicious movements and enables exact friend-foe recognition. It also identifies attempts to manipulate cameras, such as spraying, defocusing or twisting. It detects loitering, i.e. when people spend an unusually long time in predefined areas. Nuisance alarm activations caused by small animals, birds, shadows and clouds can be eliminated. It enables precise and reliable detection of attacks on critical infrastructures, even in difficult weather conditions. The server-based analytics module is a powerful addition to any video management system and can be easily integrated using defined interfaces. **www.ips-analytics.com**

Access control readers and credentials

Deister uses only current open global standard technologies to offer the highest level of data and privacy protection, such as Mifare DESFire EV1/2 (embodying AES) credentials and compliant readers, and OSDP2 as the protocol between reader and controller. Different options such as smartframe, deBus and/or transparent reader mode offer additional security. Existing credentials, readers and controllers can be integrated, since replacing everything is logistically and financially impractical. Legacy access control credentialing technologies present increased vulnerabilities and the threat requires modern technology solutions that meet this dynamic threat now and in the future. Deister utilize future-proof security, and adhere to best practices for secure encryption to widely reviewed open standards and data protection. The system design takes a layered security approach using stringent best practices for data protection. **www.deister.co.uk**

Touch Reader for Radio-Controlled Lock

The Ülock wireless lock from Süd-Metall Locking Systems can be directly incorporated into existing systems via the phg crypt protocol and controlled with the Voxio Touch RS485 online reader. The benefits of this reader can now be used with the battery-powered ÜLock. Existing doors can be easily upgraded and incorporated into an access control system. This works both with the Voxio Touch as an 'online' reader networked via RS485 using the phg crypt protocol, or as a 'stand-alone' reader managed with a master card system, or PC-controlled using Access Manager and NMT. **www.phg.de**

Multi-Sensor Camera

Johnson Controls has further expanded its Tyco Illustra range with the ONVIF Profile S compliant Flex multi-directional camera. Designed to monitor wide open spaces, the second generation Illustra Flex camera is equipped with four separate image sensors that can be individually positioned and angled to provide up to 360 degree coverage via four separate non-stitched video streams. Each of the four sensors captures high-quality 4 MP images. As well as the reduced capital cost, the multi-directional camera requires less cabling and mounting hardware and only a single IP connection. A three-axis gimbal on each sensor allows their individual fields of view to be finely tuned. This enables, for example, 360 coverage of large open office areas, retail stores and car parks, 270 degree coverage when the camera is installed externally on the corner of a building or a 180 degree field of view when the camera is mounted on a wall. **www.johnsoncontrols.com**

SECURITY FOR BANKING

Safe Cash Flow
The Value of Advanced Video Security for Banks

In the banking sector, video technology has played a pivotal role in helping financial branches protect assets, prevent losses and enhance security as a whole. Especially as banks around the world adapt operations for the "new normal," it's essential to put in place forward-thinking video security systems to establish an environment that is safe for all occupants and proactively monitors key areas while still being able to follow through with excellent customer service.

Modern-day financial institutions can achieve enhanced situational awareness and improve their protection of highly valued assets and people by leveraging innovative video capture technology. Manufacturers today have developed camera systems that are much smarter, capable and intuitive than what many branch and facility managers have been accustomed to in the past.

Better Image Quality
IP camera technology has made significant advances over just the past few years in providing state-of-the-art image quality. Far too often, banks decide that the existing analog cameras or first-generation digital video systems are still adequate, but in reality, there is tremendous benefit from implementing the latest IP video technology that far exceeds in performance.

High-resolution sensors on surveillance cameras greatly improve video footage simply by generating high-quality, crisp images. Video surveillance equipped with high resolution should, frankly, be integrated into every

installation at a financial institution, particularly because money handling and most other detection and intelligent analytics require this technology.

Ensuring quality footage also involves two other IP camera innovations. First, without adequate lighting in an area, captured video will be dark and grainy, right? Wrong. In any lighting situation — whether that's distorted light, high contrast, low light or no light — certain image processing technologies are able to dynamically compensate and adapt exposures. Simply put, lighting is directly correlated to exposure, but with multi-exposure high (or wide) dynamic range (HDR) technology, several sequential frames with different exposures are taken and merged using adaptive algorithms by selecting the best areas of exposure for realistic image quality in every frame.

Second, upgrading to an advanced IP video system also means that there will be more data captured, so setting up an efficient and secure storage strategy is key. However, when banks require maximized retention of video data to more effectively carry out security and monitoring operations, image quality can

easily be sacrificed. Fortunately, smart compression technologies have been developed to increase the reliability and capacity of stored data, without compromising on quality. In some devices, it can lower bandwidth and storage requirements by up to 70% while retaining image integrity and critical video data for forensic purposes.

Full Coverage of High Traffic and Critical Areas
From public gathering spaces, to entry points, to vault areas, providing security officials with the ability to dynamically view entire areas, or zoom in, tilt and pan to a specific view, will improve a bank's overall surveillance capability. After overcoming the challenges to return to normal daily business operations, it may be wise for financial institutions to consider installing panoramic cameras combined with fixed IP cameras at strategic locations. These video security devices will eliminate the need for extra coverage at blind spots, entrances or other vulnerable areas. Then, security management can ensure that they have wide visibility and the capability to pinpoint clear visuals of

Cutting-edge analytics, leveraging algorithms powered by deep learning technology, is embedded or integrated separately into certain security camera models with intelligence at the core

With advanced video analytics, threat detection is improved, allowing security management at banks to quickly focus on urgent situations

faces or precise activities at any time, as well as an instantaneous record of incidents that occur on the bank's property.

With the right security technology placed at critical areas, integrated video can be effectively applied to improve security operations and prevent theft. For instance, vaults are highly valued areas that require extensive oversight; cashier desks should be closely monitored to gather relevant information about a variety of transactions; and workrooms in general need to be observed when a safe is opened and money is counted. Additionally, entry and exit points should be watched for suspicious activity, as well as where queues are formed and other high traffic areas. A strategic approach with panoramic, fixed IP or PTZ cameras will offer high-quality video performance with wide coverage and detailed footage, making it next to impossible to miss how an incident unfolded.

Secret Surveillance

While installing security cameras that are visible to anyone at a bank will provide in-depth coverage and can occasionally act as a criminal deterrence, there are definite benefits of deploying a system of discreet, unobtrusive cameras. Some camera lines have been designed to be compact and easily concealed; any financial institution will gain an advantage with hidden cameras or "secret surveillance". They allow for greater coverage without making genuine customers feel uncomfortable, but most importantly, installing discreet cameras will virtually eliminate the possibility for criminals to evade being detected and subvert a bank's security oversight efforts.

Advanced Video Analytics

Situational awareness starts with the camera's ability to provide broader video intelligence. Cutting-edge analytics, leveraging algorithms powered by deep learning technology, is embedded or integrated separately into certain security camera models with intelligence at the core. With advanced video analytics, threat detection is improved, allowing security management at banks to quickly focus on urgent situations. This smart detection combined with predictive analytics afford banks with better decision-making and greater insight into behaviors and patterns.

Using video analytics, financial institutions can monitor critical areas where money is being handled or transferred, and set up alerts and special notifications to enable security officers to respond before situations escalate. Also, imagine the investigative power of video analytics when someone's bank account has been compromised. To prevent fraud and tampering, analytics can be configured to detect potential incidents of skimming devices at ATMs or possible cash harvesting, sending alerts in real-time to pre-determined security management.

At a time when social distancing seems to be progressively more important, openly integrated video systems with advanced analytics can give banking institutions the ability to locate overcrowding and track the number of individuals traveling through, or even loitering within, a defined area using heat mapping and deep learning edge or cloud-based analytics. Similarly, many video security systems have been upgraded to help branches achieve compliance with

health and safety policies, including elevated temperature detection of individuals at risk of potential infection, coupled with alerts and detailed tracking of site occupancy levels. This allows officials to reallocate staff or adjust best practices based on analyzed video or monitoring in real-time for rapid response.

Investing in Maximized Security

Employing the use of an advanced video security system should be a fundamental part of operations for banks and financial institutions today. Mission-critical assets, sensitive information and a surplus of money need to be optimally secured. By implementing state-of-the-art video technology, enhanced image quality, detailed coverage of critical areas, pivotal camera installation options and the power of advanced video analytics provide layers of actionable intelligence for comprehensive protection, safety assurance, crime monitoring and risk mitigation.

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BANKING SECURITY

Security You Can Bank On

A Look at Some Banking Security Solutions

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It happens in every cops and robbers film at some point: the detectives assigned to find out who robbed the bank scan through the CCTV recording to get their first clue on who the bandits might be. The older the film, the more grainy, and useless, the images are, which is in stark contrast to the high standard of today's HD images. But looking after the event is only half the story – today's systems can to some extent even predict a crime about to happen. Without touching on the subject of IT 'cyber' security – with which we could easily fill a whole issue of the magazine – GIT SECURITY takes a look at video surveillance and also other physical security solutions specifically conceived for the banking industry.

A modern surveillance camera equipped with the full panoply of features will deliver not only excellent images, but also vital information that forms the basis for critical decisions. Choosing the right type of camera for the location and situation is vital and the wide range from manufacturer Hanwha Techwin would be a good start. Their highly secure Wisenet cameras have the wide dynamic range to correctly deal with the fluctuating and adverse lighting conditions near entrances, and also impressive low-light performance for night-time operation, and deliver high-definition images that form a good basis for analysis.

Intelligence At The Edge
The excellent quality of today's imaging electronics has enabled video surveillance to grow far beyond just watching what's happening. The software that nowadays applies algorithms to received images is becoming more powerful almost on a daily basis. This provides us with tireless, intense and automatic analysis of video content, with objects and people being identified very accurately and conclusions being drawn from events before the camera. Hikvision's AcuSense smart banking surveillance products available in various configurations work together to provide a

complete solution that interacts with other systems to raise alarms when necessary.

Go beyond the simple recognition of people and you can analyze their movement to determine their behavior, and possibly their intentions. Learning algorithms can, after a while, establish what is 'normal' behavior and what is 'abnormal', 'suspect', 'dangerous' or even 'violent'. So a surveillance system can give us an early warning of impending trouble. It may turn out not to be an issue, but it is obviously better to be prepared for an incident than caught off guard. Such a surveillance solution can be provided,

Depending on the security requirements, Perimeter Protection Group has different movable or fixed crash bollards for sites. All bollards feature robust construction with heavy gauge material and high tensile steel

amongst others, by the Vision Hub solution from Qognify. This VMS will generate alerts when certain criteria are met, and guide the operator through the recommended response for that type of alert.

Closed Door Policy

It is every bank branch manager's nightmare to be called by the police in the middle of the night and asked to attend and clear up after a break-in at their branch. The first line of defense against such break-ins are security doors and windows. In Brooklyn, New York, Shield Security Doors offer the 'Fortress' range of doors that really don't show their strength, but will thwart even determined and well-equipped burglars. In the UK, you might give Banham Security a call to discuss which of their special doors will provide the right level of protection for your premises. In Europe, Sälzer Building Security (Saelzer) will be happy to advise you about their wide range of security doors; they provide a useful overview of applicable norms and standards on their website. The Belgian manufacturer Metal Quartz manufactures a range of physical access prevention products in its factory in Péruwelz while Barborr Security Doors manufacture their security doors in Lithuania and also deliver all over Europe. Assa Abloy carry a range of security doors in the Middle East together with their local partner Union, who operate design centers where the products can be seen and specified.

When specifying a security door or window, talk first with your insurance company to find out what category of protection they require for your policy.

The US has its own resistance rating specified by the Department of State, as does Europe with its EN 1627:2011 standard, and it is important to specify the correct protection level suitable for the specific risk to be protected. For example, 'FE 15' means resistant to forced entry standard for 15 minutes, while RC 4 rating certifies that a door can withstand entry from highly skilled attackers using heavy-duty tools such as crowbars, sledge hammers, axes, wedges, saws, steel cutting pliers, or power drills. In the UK, you will see 'LPCB' ratings developed by the loss prevention certification board. The LPS 1175 standard refers to the physical security provided by 'intruder-resistant building components'.

Locked Up

Not every member of staff in a bank should have the same access rights to particular areas within the building and it is therefore necessary to assign specific access rights to each person, depending on their seniority and responsibilities. An electronic locking system is far preferable to a system of mechanical keys, not least because it will provide an audit of locking/unlocking activity. The 3060 system from SimonsVoss is one such system, and it provides highly flexible, individual user profiles that will already prevent 'abnormal' usage of access rights simply from the time of day or day of the week. If necessary, the system can be remotely and securely administered. You might also look at the Bluesmart system from Winkhaus that offers particular operational advantages through its meshed network structure and integration with other building systems.

The Wisenet camera range from Hanwha Techwin comes with advanced analytics capabilities to detect suspicious behavior

VisionHub is an enterprise-class video management system that provides the necessary holistic approach to make sure that customers take the maximum benefit from their video security solution

Come Right In or Stay Out

Apart from the two systems mentioned above, many other manufacturers now offer biometric user authentication to provide and extremely high level of security. This can take the form of a facial scan, a fingerprint scan, a retina scan/iris identification, or voice recognition or, best of all, combinations of these methods. The Thales Cogent Face Recognition Platform is one such system that integrates well with others to provide seamless security, especially to high-security areas. The stylish terminals from TBS in Switzerland come with various combinations of biometric capabilities and also integrate with other higher-order systems.

Where the public and staff should not mix, physical barriers are often made of security glass. A recent live demonstration of supposedly unbreakable vehicle glass that broke, and has unsurprisingly since gone viral, demonstrated that not only the glass itself is important, but also its frame and the complete installation in general. Silatec delivers ShooteQ, a so-called ballistic glass, throughout Europe that withstands bullets, and sledge hammers. Rated P6B, it comes in various thicknesses depending on the perceived threat, but even the toughest is still remarkably thin. The Vetrogard and Polygard glasses from Vetrotech are also bullet-resistant and comply with international armed attack standards. These can provide an impenetrable barrier for would-be attackers and simultaneously peace of mind for staff taking cover behind. Stateside, Ackermann Security will be happy to advise you on the best type of security glass for your particular premises.

Wheel It Away

We are intentionally not mentioning the security methods used for the protection of cash, the operation of safes and vaults or discreet alarm buttons – the banks are already well informed and equipped in this matter. What they often cannot prevent in some cases, however, is the sort of 'ram raiding' and physical theft attempts of cash machines. The method used by the crooks is usually the same: a stolen 4x4 is given false license plates and used either to demolish the frontage of the bank to gain access to the cash dispenser and crack it open on site, or used as a tow truck to physically haul the cash machine out of the building for later dismantling. Preventing the vehicle from getting near in the first place is a strategy that can be agreed upon together with the pathway and building owners through the installation of vehicle bollards.

In the Americas you'll find that TrafficGuard have a wide range of products that blend in with other street furniture. Avon Barrier in the UK have a range of static and retractable bollards to form functional ram-raid prevention, while throughout Europe you will find the attractive bollards from Perimeter Protection Group installed around many such sensitive buildings.

The Onion Principle

A combination of the methods mentioned above will provide a high degree of security, not only for the banking industry but also for others. The strategy is to put as many hindrances in place as possible, both obvious and discreet, for an affordable investment to prevent crime from taking place. Each layer – rather like the layers of an onion – has to be overcome before reaching the next, with people and property right at the center. The companies mentioned here are all specialists in their field and can work together to provide a really effective onion.

MOBILE ACCESS CONTROL

High Security Connects with Health Wellbeing
How STid Transforms Challenges into Opportunities

Vincent Dupart,
CEO STid

François Gitz,
Sales Manager STid

The access control market is rapidly moving towards contactless technologies and solutions must be both uncomplicated and high-secure. GIT SECURITY has asked Vincent Dupart, STid's CEO, and François Gitz, STid's Sales Manager, how this demand forms the two fundamental pillars of STid's expertise.

GIT SECURITY: Can you give us an update on the latest trends at STid?

Vincent Dupart: Our growth continues, our strategy is consolidated and our investments retained. This period is challenging for a lot of companies. Our investment in a robust IT infrastructure has allowed us to set up teleworking and maintain an optimal quality of service. Our eyes are locked onto the future and if you ask for our ambition, it is to continue on the path of innovation.

What changes do you see within the access control market?

François Gitz: The health situation is disrupting our lifestyle. Our daily life is now punctuated by this subject matter „Stay Safe". Contactless technologies offer a real solution to this need for protection. STid's vision is to create products and solutions that grow with ever-changing security needs. We design and supply contactless identification products and solutions for Physical Security, Logical Access Control and Automatic Vehicle Identification. With STid, the smartphone, our greatest personal device, becomes the access control key thanks to its operational effectiveness, flexibility, efficient access, and intuitiveness.

What are STid's keys to success in the access control market?

Vincent Dupart: Our success is based on our ability to combine two paradoxical needs: the requirement for flawless security from Security Departments and the necessity for seamless user experience, by removing identification constraints. With STid, access control becomes instinctive and guarantees data protection. Our access control solutions are future-proofed and we are able to adapt to any customer needs evolution. Moreover, we promote open technologies. We guarantee organizations independence and full autonomous management of their security. This freedom is essential for STid: our customers are not locked into a solution or tied down by proprietary technologies. This bold positioning entices and retains our customers. Another STid strength is our capacity to offer uniformed end-to-end security. We ensure faultless end-to-end security between the card and the reader (with Mifare Desfire EV2/EV3 technologies), and between the reader and the controller/LPU with systems capable of supporting OSDP and SSCP (Secure & Smart Communication Protocol) protocols.

What are the strengths of the SSCP protocol?

Vincent Dupart: The SSCP Protocol is an architecture allowing integrity and confidentiality by the encryption of sensitive data. This protocol is supported by Smart Physical Access Control Association (S.P.A.C.). SSCP protects the communication of physical and digital access control equipment. The SSCP protocol provides uniformed protection for all your applications by protecting interface communications (RS485, USB, TCP/IP, etc.). This protocol guarantees the interoperability of all equipment through compliance certification. Why? To build trusted solutions and to provide genuine technological independence for more freedom and sustainability.

You mentioned S.P.A.C. Association. How will this Association help the security ecosystem?

Vincent Dupart: We have formed S.P.A.C. to help with security Industry 4.0 ecosystem in the choice and the creation of trusted solutions. Today, we have to seek a collaborative response to fight against cyberattacks and to secure the ever more varied entities that can be connected or not and to the French and European regulatory framework. S.P.A.C. will rely on the regulatory framework to support the ecosystem in the increase of the level of security within our solutions. But that's not all! S.P.A.C. will rely on the certified CSPN standard SSCP protocol which permits interoperability of the equipment. It allows securing cable or wireless links for the use of connected objects and allows secure communications with additional equipment other than the reader, such as locks, doors, sensors, cameras and barriers.

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The 3060 system from SimonsVoss can meet the special access control needs of schools and other educational institutions

ACCESS CONTROL

A Lesson In School Security

More Security for Schoolchildren and Teachers

The concept of learning at schools is one of openness and having one's own sense of responsibility. With regard to entrances, corridors, doors, lockers and cabinets however, supervision is unavoidable in these times because it concerns the security of everyone present in the building. An intelligent lock and access management system, such as the 3060 system from SimonsVoss Technologies, secures the entrances, documents all entries and exits, assigns temporary authorization and protects teachers and children in an emergency.

This is how it once was in schools: the janitor in his grey overalls, carrying a heavy keychain in his pocket, was lord over the locking and unlocking of doors throughout the school. Apart from him, just the teachers and the cleaners had keys to the main entrance and the classrooms. When other keys were issued, this was usually recorded in a handwritten log. But today it is no longer possible to know what keys exist and how many copies have been made for the many old, mechanical locking systems that are still in daily use in primary and secondary schools. The teachers are usually issued with a master key and one for storage cabinets. But it is difficult to keep track of the continually changing army of supply teachers or the 'springers' from the 'mobile reserve'. If a teacher forgets to lock the computer lab, the chemistry lab or the workshop for example, it is completely unprotected.

One ID Device Per Person

The special situation of schools and other training establishments with many people coming and going each day demands an intelligent, flexible and centrally controlled system. Unauthorized entry to the school grounds by strangers must be prevented all the time. Protection against theft, burglary and vandalism is also an important consideration alongside possible emergency situations, such as a fire.

SimonsVoss, a specialist for digital lock technology, has a solution for schools and other educational establishments in the form of the 3060 networked lock and access control system. This is secure, easy to maintain and to operate, and only one identification medium is necessary per person. The conversion from mechanical to digital technology can be carried out without interruption to normal operation.

Individual Rights

The situation changes in schools with the start of each new school year with new

The AX Smart Handle can be adapted to the spindle, door thickness and center distance. The handle itself can be mounted on the left or right

The electronic cylinders need no wires for power or control; internal batteries last for up to 300,000 operations

room plans, teachers and timetables. Various different groups of people – among them the teachers, children, cleaning staff and technicians – need access at different times to different areas of the buildings. A trend is also now developing whereby certain rooms become multifunctional, and some are even rented out to external clients. This could be the cafeteria for events, the music studios to bands, classrooms for evening classes or the use of the sports hall for clubs. Keeping control over access rights is particularly important in such cases.

The 3060 system can not only administer the main entrance, side doors, corridors and doors but also elevators, lockers and cabinets. So for example, the main entrance can be open for everyone during school time and then restricted outside this time just to people authorized to enter, such as teachers and cleaners. In emergency situations, all the doors can be unlocked at the push of a button, and doors can even be unlocked remotely. Specific floors can be made accessible for certain people via the elevators.

Door Monitoring

The Door Monitoring function provides surveillance of all external doors and also internal doors to high-security areas. Transparency and traceability are ensured by the continuous recording of locking/unlocking events. Any alterations to the system are also recorded so manipulation is impossible. A practical aspect of the identification media: besides the robust and long-lasting transponders, existing smartcards, such as student IDs, can also be used as a digital key. Lost ID media can be quickly barred with a single click of the mouse to prevent misuse. The system is managed by the facility management using the LSM software that SimonsVoss provide in various versions to suit every type of school application.

Networking Option

The 3060 systems can be run offline, virtually networked or operated online if required. In online mode, all the functions and updates to access rights are carried out centrally with the LSM software and sent over the network in real time. There is then no need for any programming to be done on site. Online operation is very convenient and provides the highest level of security. Offline systems can also be upgraded to networked online operation later. In contrast, virtually networked systems have changes to their access rights distributed via strategically placed gateways to the ID media and to the locks.

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A door monitoring function shows closed or open status, (un)authorized access events and attempts to break in or manipulate the lock
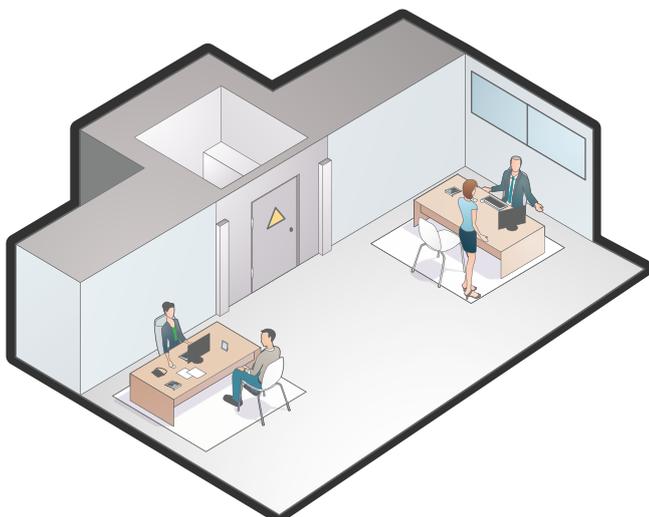
Having one ID device per person means that only authorized people can gain access to places that they need to be, and only during predetermined periods on specific days

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HOTEL SECURITY

Sleep Well And Safe

A Look at Some Hotel Security Solutions

Security is brought sharply into focus at the latest whenever an incident occurs and the press report extensively on the event, the background to it, the people affected by it and, quite often, the political consequences. What is not in the public eye is that thousands of well thought-out security systems around the world are quietly doing their job and preventing many more incidents from happening in the first place. The hotel environment poses its own particular set of challenges to effective security, and the manufacturers of systems tailor-made for this industry have the corresponding answers. GIT SECURITY looks at just some of the many solutions on the market today.

Being in principle a place with unhindered access for the general public, the General Data Protection Regulation (GDPR) applies to the hostelry environment in Europe to its fullest extent. This means that, while cameras are of course allowed to watch over activity in and around the public areas of the building, the data that they produce must be recorded and protected against theft, misuse and unauthorized access. And if the data goes off site, it must be encrypted before transmission.

Video Security

AV Costar (formerly known as Arecont Vision) have four IP camera ranges with ONVIF compliant models specially designed for specific locations and applications, most of which can be found in and around hotels. Their product range also includes the corresponding video management software and recorder/servers. For hotel chains with multiple properties that want to centralize their video security operations, Eagle Eye Networks provide remotely operated systems with secure video encryption and a powerful management interface.

The day/night cameras that generate today's HD images come in all shapes and sizes, matched to the environment in which they will be operating. Axis Communications range includes many different internal and external camera types, including infra-red cameras that still deliver important details under difficult lighting conditions, for example around goods entrances or car parks. Cameras are also becoming ever more clever in themselves, with onboard functionality 'at the edge' that was once only found in the central equipment. Mobotix include video analysis functions directly into the firmware of their discreet cameras in the form of specialized apps. This decentralized approach saves bandwidth on the data transport network but has effectively the same functionality as 'traditional' systems. Recordings can be investigated after the event or even live using the clear video streams.

Digital video recorders have long become part of a hotel's IT systems through

© Mobotix

The Mobotix i26 180° discreet camera looks at first glance like a ceiling loudspeaker and is difficult for people with dubious intentions to avoid

ever closer integration and must be considered as vulnerable to external attack as any computer in the system. The products from Intransa can provide a powerful and legally watertight solution here for the potentially very large amount of critical data to be stored and correctly maintained.

Entrances and Access Control

Let's be realistic: if you were asked to make a building secure, would you leave the front door open and mostly unattended twenty-four hours a day? It gets worse: would you then also give people keys to rooms where they can lock themselves in and others out? And have dozens of completely unknown people walking in to hold their meetings behind closed doors? Maybe they parked their car in your underground garage too … These and other (let's call them) 'weak spots' are the daily concerns of the hotel security team, so a comprehensive strategy to cover 'normal' operation as well as every conceivable problem is essential. We're talking here about planned and opportunist theft, vandalism, unruly behavior such as drunkenness or drug-induced actions, personal attacks, and the worst-case scenario of terrorism.

So while the main door to the street is unlocked, other ways in and out of the hotel must be secured, and monitored. While the video solutions mentioned above take care of the monitoring, the locking and status checking can be done, among others, by electronic locks from SimonsVoss. Their electronic cylinders offer a range of door status monitoring and logging functions not available from mechanical locks. Installation is quick and easy and the door furniture looks attractive too. Whether you already have legacy electronic lock systems or

not, Genetec's Synergis Security Center provides you with an efficient management tool to administer both their own and third-party access control systems, no matter how complex. It aggregates diverse systems to provide one convenient operator interface.

Personnel On Duty

Access control can conveniently be integrated with a time and attendance system, or vice versa. This will handle the comings and goings of both domestic and institutional housekeeping staff as well as catering for suppliers and contractors working on site. DormaKaba, for example, have systems that combine the functions of time and attendance recording with the flexible and secure access control that hotel operators require. This convenient solution reduces system administration and makes it simple for staff to move around the premises and do their job efficiently. Salto Systems provide tailored systems to various hotel chains that provide sophisticated yet simple access control for staff and guests alike. TBS also offer a combined access control and time and attendance solution for hotels. It provides automated access control, including user verification by fingerprint scanning to avoid schedule cheating.

Come Together

Integration is the key word for the seamless functioning of formerly disparate systems. Gone are the days of the security team surrounded by a dozen blurred monitors, red and green lights, knobs and buttons for separate systems. Modern technology assists the security team and other staff with a continuous flow of information, filtered according to relevance and priority, and presented in an

The compact Salto Neo Cylinder lock fits any door at any building and delivers an easy-to-use electronic locking platform that integrates all of the physical security needs through smart, wireless, and battery-operated smart cylinders

Training

So the systems are in place and now it's only down to that final security risk factor, the staff. In an emergency situation there is no time to discuss what to do – staff must know their responsibilities and the immediate actions to be taken. Training can be carried out by the hotel's own security personnel, but they are not normally trainers themselves. Excel Security Training offer bespoke courses worldwide to match the specific needs of each client that, amongst other important topics, cover environment awareness, kidnapping, boutique security and female traveler awareness. And although the Sky Touch offices are in Brisbane, their online hotel security awareness course is available worldwide and in over 100 languages. They also offer some very useful tips on dealing with the Covid-19 threat.

The wide open hotel environment does not have to be an easy target for criminals. As the examples above show, there are many simple and sophisticated systems available to prevent both opportunist and planned crime. These together with the awareness of trained staff and a dose of common sense can make the successful mix to ensure a good night's sleep.

easily and, above all, quickly comprehensible way. Combining intruder alarms, heating ventilation and air conditioning (HVAC), fire alarms, video surveillance, elevators, lighting, and access control into one sensible human interface not only saves effort but also ensures that staff quickly understand exactly what is going on in the case of an emergency of some sort. The BMS (building management system) will automatically take control of various sub-systems, issue the correct commands to them and inform operators when something is out of the ordinary.

Johnson Controls offers the Metasys BMS that does all of these jobs and they have sales representatives worldwide. In Europe and the USA, Bosch Building Solutions provide bundling solutions that automate the control of major systems and take the load off staff. They can also incorporate the company's own public address and personal security systems as well as integrate those of third-party suppliers. The Desigo CC solution to integrate all disciplines on a single platform is fully modular, scalable and extendable and comes from Siemens, who also provide a 'compact' version for smaller properties.

◄ An extremely low-maintenance but high-security access control system like the 3060 from SimonsVoss solves all sorts of worries about authorized access by staff and contractors

CONTACTS

AV Costar
www.arecontvision.com

Axis
www.axis.com

Bosch Building Solutions
www.boschbuildingsolutions.com

DormaKaba
www.dormakaba.com

Eagle Eye Networks
www.een.com

Excel Security Training
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Sky Touch
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VIDEO SURVEILLANCE

Lock Down Your Security

New Features for More Control and Security

Raytec introduces new features for their Vario2 IP PoE illuminators. Already delivering high performance and reliability, the latest upgrades provide an even greater level of control and security.

Easier Setup and Access

The latest Vario2 IP PoE illuminators allow for easier setup and access. During setup, each individual lamp is now automatically assigned a random IP address. This ensures lamps never become 'lost' during setup and increases the ease and speed of commissioning. Combined with DiscoMan, Raytec's new discovery & management tool which was released earlier this year, setup and access of Vario2 IP PoE illuminators has never been easier.

Advanced Diagnostics

The illuminators now also provide users with more advanced diagnostics. Accessed via the integrated web interface, lifetime diagnostics are now available to provide information about the lamp's usage and history, such as the max voltage input and total illuminator on-time since being installed.

Vario2 IP PoE now offers greater diagnostic functionality for those using the illuminators as part of a third-party system. Fault triggering is now available which allows the user to detect faults using the external output. As well as enabling the user to monitor the

illuminator's input voltage status, it can also be used to identify any LED faults our power outs.

These new features allow users to obtain more detailed diagnostic information quickly, and remotely. Ultimately this saves time and money and provides the user with greater confidence in the illuminator's overall heath.

More Secure

With high levels of security being paramount for many applications, it was Raytec's mission to make the latest Vario2 IP PoE more secure than ever. They have achieved this through stricter access control and the availability of a secondary access port:

- Stricter Access Control – Vario2 IP PoE now offers stricter access control when first accessing the lamp. Before being able to access the integrated web interface, the user is forced to change the password. This means the user is no longer able to use a default password to set up the lamp and ensures a greater level of site security.
- Secondary HTTP Port Access – access via a secondary HTTP Port is now available with Vario2 IP PoE. The

standard Port 80 can be disabled, and the lamp accessed via a secondary HTTP port. With generic webpages normally hosted on Port 80, having a secondary access port increases the overall security of the lamp, decreasing the risk of the lamp being hacked. The secondary port also makes Vario2 IP PoE the ideal solution for applications where port 80 has been blocked for greater system security.

IEEE 802.3bt Compatibility

In addition to these new features across the IP PoE range, i8, w8 and hy8 variants are also now bt compatible and can be used with equivalent bt compatible power equipment and injectors.

INTRUSION DETECTION

Into the Dark

The Role of Radar and Thermal in Enhancing Perimeter and Area Security

SPECIAL FOCUS

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Nature often provides the best inspiration for new solutions. For example, some animals have developed different types of vision to match their environment – from a racoon's night vision to a snake's infrared sensors and a bat's echolocation. These enhancements allow them to understand what is happening around them and detect threats. This approach works well in nature and is equally useful in protecting sites from intruders.

The nature of intrusions can be highly varied and depending on the scenario, the right combination of devices and technologies is the key to identifying and catching a potential intruder. Two technologies that work well in challenging environments are radar technology and thermal imaging. These are valuable additions to a surveillance solution, given their capabilities which help security personnel improve protection across the site.

Seeing More in the Dark

Changing ambient lighting levels and adverse weather conditions will impact the quality of visual images, making intruder detection more challenging. Also, it's not just unauthorised people that can cause problems. Wild animals tend to wander onto premises, inadvertently triggering false alarms. Another factor which must be examined when it comes to surveillance is privacy. It may not be appropriate to mount a standard PTZ camera in some areas. In these cases, alternative methods must be sought.

Turning Heat into Images

In contrast with standard security cameras, thermal cameras work by capturing images based solely on the heat radiating from people and objects. This means they are able to 'see' a potential threat, regardless of the current environmental conditions, making them equally accurate in the dark and on a bright,

sunny day. This is particularly important in hazardous, remote areas where there may be no light at night. Thermal cameras can also be very useful indoors, especially in situations such as healthcare environments, where privacy and personal integrity are of great significance.

While capturing images without using visible light is useful, intelligence is needed to differentiate objects captured on video, especially when the objective is to identify threats. Thermal cameras can be combined with analytics to automatically dismiss non-threatening objects and immediately notify security of potentially critical situations.

For example, a thermal camera may spot an object moving towards a perimeter or restricted area. It can then tell whether this is a non-threatening situation, such as an animal passing by, or something that needs attention, like a car or person. If it is the latter, a guard can be deployed to investigate further, while non-threatening situations are not progressed. This saves considerable time, resources and overall costs associated with investigating false alarms.

This becomes useful when monitoring large premises with vast perimeters and limited lighting, which can be difficult for security personnel to do manually. Thermal cameras allow an efficient detection of intruders, through features such as cross line detection, motion detection or loitering detection in certain areas. If an unauthorised person comes too close to the perimeter, an alarm or recorded warning message could be triggered.

Radar Waves Provide the Locations of Objects

Similar to thermal cameras, radar technology relies on a different methodology to 'see' objects. It is capable of detecting objects and people based on reflecting radio waves, even in challenging environments. The benefit of using radio waves over infrared or visible light is a comparative lack of interference caused by day-to-day obstructions or triggers of false alarms.

Radio waves can pass through spider webs, fog and smoke, allowing radar equipment to focus on objects of significance regardless of the conditions. They also operate independently of the visible light spectrum, and thus work unimpeded by difficult lighting conditions. This is especially useful for sites with large perimeters, such as chemical or food production plants, which must be constantly monitored.

A particular advantage of tracking the distance of objects is that radar can be set to operate within specific zones, for example within a fenced off area – again reducing false alarms from activity outside the perimeter. The drawback is that unlike thermal cameras, radar technology cannot visually identify objects. It can classify the type of object (for example, as a human or vehicle), but other devices within the surveillance solution would be needed for verification.

Non-visual Cameras Protect Privacy

While surveillance is critical when monitoring for intrusion and adverse activity, personal privacy must be prioritised when choosing a solution. Although security radars and thermal cameras detect whether a person has entered a site, identifying features are omitted. This is especially useful regarding privacy regulations, as it ensures an organization will remain safely in compliance, without missing potential threats.

In particular scenarios, this masking of identity can prove to be valuable in determining where these devices are used. For example, some public facilities have specific requirements for their surveillance solutions. Public swimming pools are often targeted by individuals looking to access the premises outside of opening hours. Unattended intruders pose a significant health and safety risk and can also damage equipment, so identifying unauthorised access is critical. However, any surveillance system implemented must be able to work in different lighting conditions and protect visitors' privacy. In this case, radar works well, as they do not require a light source to detect intruders and can cover a wide area. Thermal cameras can also work in smaller areas in the facility – where privacy is still critical – such as outside of the changing rooms. Alerts can be sent to security personnel if motion is detected, enabling guards to verify whether a person entered the restricted area.

Optimal Solutions Require Flexibility

Finding the right solution to fit the particular needs of the business can be challenging, as there are many factors which must be considered. The size of the premises, the presence of supplementary lighting and the location of the monitored area, all play a part in determining what type of surveillance system is needed. Thermal imaging and radar technology can be valuable additions to systems, but the existing solution must be able to integrate different types of technology to suit changing needs. For example, if a larger area needs to be monitored or if the lighting conditions change.

Open network surveillance systems allow organisations this type of flexibility, to help organisations to adapt as new technologies emerge. In this way, security radars and thermal cameras can be added to enhance their surveillance to fit with existing and future challenges, ensuring that perimeter and area security solutions are always suitable, appropriate and optimised.

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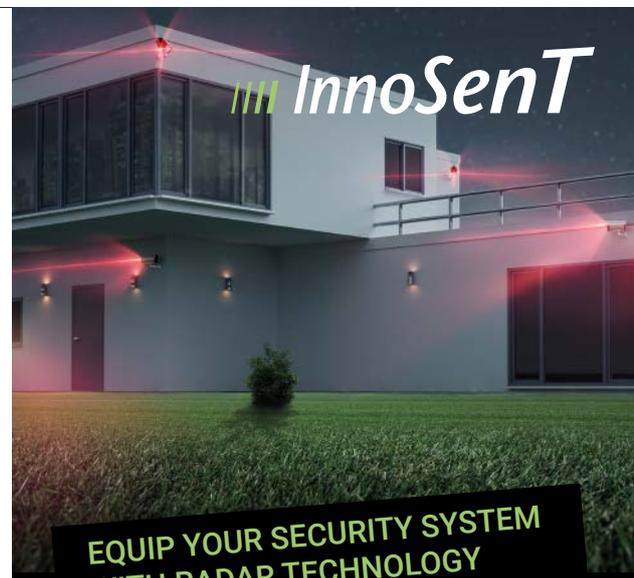
iSYS-50xx series are equipped with Smart Tracker function. This enables the continu-ous observation of all movements of the classified objects
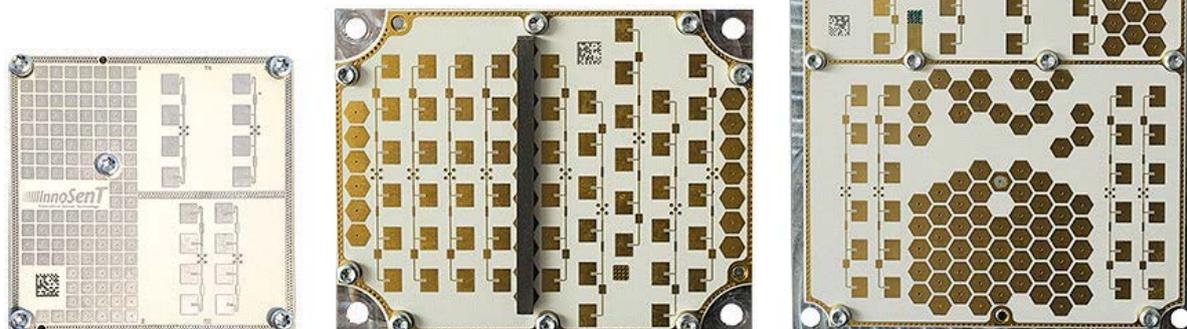
RADAR MOTION DETECTION

A Danger Foreseen is Half Avoided

Reliable Motion Detection with Radar Sensors

A significant aspect of security surveillance is motion detection. With a small movement, people or vehicles reveal their presence. Their movement makes them stand out from static objects, installations, and the environment. This way, a movement can be clearly identified in an area meant to be protected. In order to expose burglars, it is also important for monitoring to be as inconspicuous as possible – and for it to preferably go completely unnoticed. This can be achieved through the use of sensors that monitor the activities invisibly and without contact. They provide the digital movement information conveniently from a distance and serve as triggers for automated security measures.

With motion detection, a sensor detects a change within its detection range. This can then be used to determine the movement of a foreign object, because the measurement results are adapted to correspond to the movement. This is the basis for clearly identifying a movement and thus demonstrating the presence of a mobile object, vehicle, or person. Using this information and processing it as a digital signal makes it possible to trigger certain technical functions, such as the automation of security applications.

Challenging environments
The sensor technology has to tackle several challenges, because certain factors make motion detection more difficult. For one thing, the properties of the selected means of measurement impose limits in terms of functionality. For another thing, the environment of the object to be detected impacts the measurement result. The equipment's intended use and task also play a role in determining how complex the motion detection is designed to be. The challenges vary depending on the selected measurement technology and application.

For example, PIR sensors have trouble with heat-insulating clothing or lasers and camera have problems with difficult lighting conditions. With ultrasonic sensors, on the other hand, drafts of air and thin covers also cause complications. Local conditions (complex structures and movable objects), high traffic volumes, irrelevant small animals, wind movements, and multiple people in the detection area place high demands on the equipment. The result is incorrect measurements or missing detections, which can affect the application's efficiency.

Security-related Motion Detection
In the field of security technology, there are additional requirements. Here, motion detection serves as a protective measure. Deterring or alerting to a suspicious movement, for example, is meant to help prevent burglaries. In particular, reliability and measurement accuracy prove crucial for motion sensors used as security equipment. Criminal acts such as vandalism also increase the demands placed on the equipment's quality.

Many Choices
The more sensor solutions and technologies are available, the harder it is to find your bearings. Companies have to consider which means of measurement is

appropriate for their security application depending on the complexity of the task at hand and the environment in which the equipment is deployed.

There are several measuring methods used for motion detection, such as infrared (PIR), laser, or radar. The technologies utilise different means of motion detection. PIR detects motion based on a difference between the ambient temperature and body temperature, laser records changes in lighting, and radar employs electromagnetic waves, while ultrasound relies on the Doppler effect of sound waves to position objects. Video cameras can also detect motion using algorithms or integrated sensors.

For cost reasons, however, PIR sensors are most commonly used for simple applications. This might change now thanks to further developments in the field of radar technology.

Radar Technology

Radar technology is an excellent measuring technology for motion detection. In radar detection, an antenna actively emits high-frequency electromagnetic waves. If they hit an object, this results in the signal being reflected (as an echo), which the sensor then receives. The reflecting signals contain different information than before and can be used to conclude that a movement is taking place. Measurements are carried out continuously and in real time. Radar detects any change in moving people's or objects' positions. The radar-based data can be used as a digital trigger through appropriate signal processing.

This measurement method boasts several advantages compared to competing technologies:
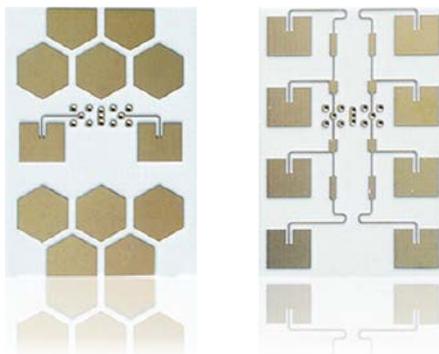
The small radar front ends of the SMR series provide simple motion detection at afford-able rates

- Radar waves are invisible to humans and pass through various materials, for example plastic. The measurement is carried out without contact, by a sensor that is integrated behind a plastic housing and goes completely unnoticed by the person generating the movement signal.
- This measurement method outputs only individual radar detection or object clusters. No visual image can be derived from this information, meaning that monitoring is carried out in an anonymous manner, ensuring data protection.
- Rain, fog, snow, wind, and ice generally don't restrict the functionality of radar sensors. They reliably detect movement despite adverse weather conditions. Even extreme heat or cold don't impair the technology.
- Radar sensors require no maintenance, and once they are configured, there is no need to check them regularly.

- The technology keeps working independently of lighting.
- Radar waves have long ranges. With this technology, large areas can be monitored and objects 150 meters away can be positioned, for example, with just one sensor. But the sensors are also suitable for close range.
- Radar boasts very good measurement quality due to its high resolution and extensive information collection. The technology provides precise and reliable measurement results for positioning objects and persons. The sensor solutions transmit data on speed, direction of movement, distance, and angular position.

More and more security equipment manufacturers are incorporating radar into their products. At the same time, the radar experts are managing to offer the sensors at more affordable prices. A very broad array of radar solutions is thus conquering the industry. Innosent already offers a wide range of radar motion detectors, providing the right solution for every application.

The various motion detectors can be used, for example, for lighting control in the garden or courtyard, but also in combination with simple alarm systems. A Tracking Radar application can be considered for more complex security monitoring from near to far.

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DATA TRANSMISSION

Long Distance

Going Farther with Cable Infrastructure

The evolution of infrastructure transmission technology continues to drive the expansion of networks and security systems, allowing edge devices to be located at much greater distances from headend operations. With the fast pace of new technologies and migration to the IoT, understanding cabling infrastructure will help ensure that the best solutions are deployed securely and cost-effectively. We've witnessed the expansion of networked systems over the past 35 years, and with the ubiquitous landscape of Internet Protocol (IP) standards now propelling even more connected functionality, the demand for faster, more expansive cable networks continues to grow.

By the late 1980's, IP standards had improved to the point that devices could be reliably connected over distances up to 328 feet using Unshielded Twisted Pair (UTP) cables – and these cables could also carry power in the form of PoE (Power Over Ethernet), allowing for cost-efficient system installations with only a minimal need for electricians. To really deliver on the promises of the rapidly developing network technologies, fast and reliable connectivity was needed that could span even greater distances.

The advent of structured cabling replaced the messy approach of point-to-point cabling, which meant every piece of hardware used its own cable literally running cable from point-to-point. Structured cabling systems came into use and are now the best solution for business networks looking to accommodate the rising need for speed and more bandwidth. It also helps to future-proof your business by facilitating any new hardware that may be added to the network

and the need for increased data analytics and storage increases. The combination of upgraded PoE standards that allow for increased power levels and composite cables that include both copper conductors and fiber optics has revolutionized the breadth of potential system deployments while delivering higher performance and controlling installation costs.

The Key Technologies

This revolution in networked security and communication system deployment distances depends on the combined effect of three key technologies:

Increased Power Over Network Cabling

The first PoE standard (802.3af) only provided for up to 12.95 watts of useable power at the end of a 328 ft. cable run, but it was a breakthrough that allowed for "single cable installations" of networked devices. The newest IEEE PoE standard (802.3bt) increases the maximum power to 90 watts over standard network cabling, supporting the use of

higher-powered devices, and importantly, greater distances to the powered devices.

The higher wattage available in the newest PoE standard also means that a single cable connection can provide enough power to energize a remote power source to support one or more networked devices. New solutions like Tango from Altronix delivers 12 VDC and 24 VDC simultaneously to power access control and security devices from any 802.3bt PoE Source using a CAT-6 or higher cable. This provides tremendous savings by leveraging low-voltage installation methods, eliminating the need for an electrician and dedicated conduit and wire runs.

Extended Data Transmission Distances with Fiber

To break through the 328-foot limitation for UTP data transmission, manufacturers turned to fiber optic cables. Optical fibers are ideal for high bandwidth distributed systems because of their extensive data-carrying capabilities and low losses that allow for transmission

distances measured in meters/kilometers. As an added benefit, fiber cable systems are immune to some of the issues that plague copper transmission systems.

**Ronnie Pennington,
Director of Sales
for the Americas**

Composite Cables

Every networked device requires both power and IP data connectivity. Composite copper/fiber cables are an elegant solution that maximizes connectivity options and future use potential while minimizing installation costs and complexity. A wide range of standard and custom types are available to meet specific current needs while often including extra unused ("dark") fiber conductors (either single-mode or multi-mode) to provide for future growth or evolving technologies.

New data transmission solutions like Altronix's new NetWay Spectrum Fiber/Ethernet Solutions take fiber and power to a new level. These units can be deployed with conventional single or multi-mode fiber, as well as composite cable that combines fiber with power to simultaneously deliver both, power and data. For example, if a large sports facility wants to add video surveillance to improve security awareness of activities over a larger area such as the public plazas between the parking areas and the facility entrances, this would be the optimum solution. It is important to note that this system would be separate from the existing surveillance system that covers the internal areas and would have backup power to ensure continuous operation.

Large sports facilities have incorporated video security surveillance systems as part of their risk mitigation strategies. Not only do these systems offer security monitoring and detection but also a package of predictive analytics that might provide a preemptive capability. Providing surveillance poses a challenge for traditional category Ethernet cabling such as Cat6 because of the long transmission distances. The longstanding alternative, providing power at multiple locations in the system, along with backup power, would significantly raise the project costs.

However, the use of composite cabling that employs a combination of single pair copper and fiber optics solves this challenge by supporting the longer required distances with larger wire gauge copper to transmit power and fiber to transmit data. The delivered power is strong enough to energize remote power sources and hardened switches housed in outdoor enclosures, which in turn can power and relay data from the security cameras powered by standard PoE. This entire system can be installed by low voltage technicians, maximizing project efficiency.

Centralizing the power source for all the IP-cameras and switches in the system at a single point is an additional advantage. With one source for all power, the ability to "back-up" the power supply can be readily provided by the installation of an appropriately sized Uninterrupted Power Supply (UPS). The same approach could be used when deploying cameras and emergency phone stations in large and remote parking lots, campus walkways and outbuildings, or to support distributed video surveillance systems in high-rise multi-story buildings.

How to Plan Remote PoE+ and IP Installations

The importance of structured cabling solutions that support video, voice, data management applications and any other tool a business might use can't be overstated. While different types of cables support different functions, they all work together in the infrastructure. To plan an installation that takes advantage of these new power and connectivity methods, system designers will need to account for these basic parameters:

- Number and location of planned remote devices
- Aggregate PoE requirements for all devices to be centrally powered
- Cabling plan – "ring" or point to point
- Distance(s) from head-end power to remote IP/PoE switch(es)
- Environmental Requirements for outdoor devices – waterproof/dust tight- IP66 rated
- If central powered, selection of power supply output (wattage)

- Number of SFP modules and connections required
- Connection to existing IPU
- Power backup requirements

When these factors are collected, designers can make use of available design tools to calculate the required wire gauges and other design elements. An example of one such calculator is available on the Altronix website.

Conclusion

New power and data transmission solutions are available to extend the distance and capacities of all types of cabling infrastructure. These new remote power sources, power controllers, power distribution modules, and other devices support the latest power and communication protocols. Consider these new capabilities for your next project, and feel free to contact Altronix if we can be of assistance.

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INDUSTRIAL SAFETY

Immune System of the Industry

Industrial Network Vulnerabilities You Need to Mitigate

Since industrial networks are primarily built and expanded to address growing business demands, it may be easy for administrators to overlook common system vulnerabilities. For example, when adding a device to a newly built or expanded network, do you know which industrial Ethernet switches have unlocked ports? Or, do you simply connect new devices without a second thought?

Ignoring common system vulnerabilities in today's world could put your entire network at risk. The following scenarios summarize some common system vulnerabilities in industrial networks that may be exploited during the three main stages of a cyberattack (i.e., exploration, utilization, and attack). After examining the threats, we will share tips with you on how to strengthen your industrial network security.

Stage 1 Vulnerabilities:
Exploration and Infiltration

Recall the last time you logged onto your network. How complex was your password? Although weak passwords may be easier for busy administrators to remember, they are also easier for malicious actors to crack through a brute force attack. Making it easy for an attacker to guess your network login credentials is like putting the keys to your house in a location that is easy for a robber to find.

Attackers commonly exploit open ports on networks. For instance, Ethernet switches act as gates through which infor-mation is sent and received on networks. If you leave the door open, intruders can walk right in. By scanning your network, hackers can identify open ports and infil-trate your network just like a burglar en-tering through an unlocked gate.

Tip 1

One of the simplest ways to enhance your network security is to ensure that users create a sufficiently complex password to reduce the likelihood of an attacker guess-ing your credentials by brute force. For ad-ditional security, you should also consider a login failure lockout mechanism that limits the number of unsuccessful login attempts, which may indicate a brute force attack. To protect your network from port scanning, you can create a whitelist of ports that are accessible through your firewall and also disable WAN pinging.

Stage 2 Vulnerabilities:
### Utilization and Network Control

During the second stage of a cyberattack, the malicious actor has already infiltrated the network and is using resources on the network for their own purposes. Even though they are not actively wreaking havoc on the network, they are secretly gathering information and laying the groundwork for a more harmful attack.

For example, a hacker may be using various scanning tools to learn about your network topology so that they can find their next target and access or con-trol more devices. The attacker can even use command injection to bypass au-thentication requirements or grant them-selves higher levels of user privileges to execute prohibited commands and com-mandeer network devices for nefarious purposes.

Tip 2

To limit the attacker's ability to move throughout your network and com-mandeer your devices, we recommend network segmentation and traffic con-trol. For example, you should partition your network into smaller segments and control the communications that pass
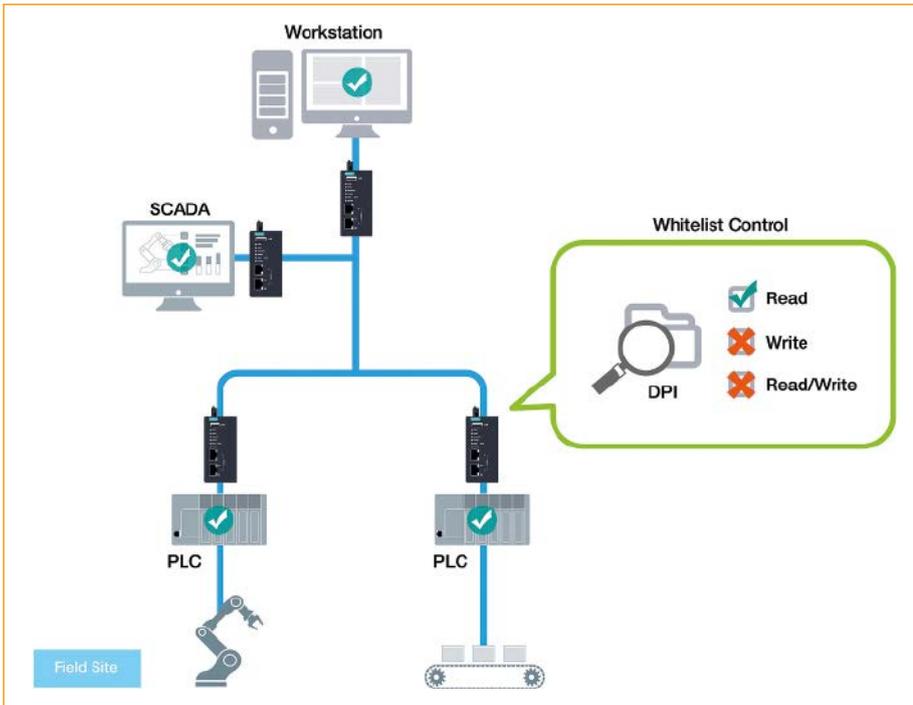
Deploying whitelist control powered by deep packet inspection (DPI) can prevent hackers from injecting unauthorized commands

malware, including ransomware to deny you access to your network resources until a ransom is paid.

Tip 3
Although damage has already been done by the time the cyberattack reaches Stage 3, you can still mitigate the overall harm to your network by ensuring sufficient DoS or DDoS (i.e., distributed DoS attacks that involve multiple systems) protection and deploying industrial IPS for ransomware and other malware. You should also maintain reliable system backups and blacklist unauthorized protocols to minimize data loss.

Summary
With cyberattacks targeting more and more industrial networks, it is crucial to identify and mitigate system vulnerabilities before these weaknesses are exploited by those who intend to do harm. There are two directions you can take to enhance network security. One is to ensure that your industrial networks have a foundation-secure network infrastructure, which allows authorized traffic to flow to the correct places. Alternatively, you can identify critical assets and give them layered protection, such as industrial IPS or whitelisting control.

through these segments. In addition, deploying whitelist control to prevent command injection can also limit the severity of the security breach.

Stage 3 Vulnerabilities: Services and Data Disruption
Stealing or destroying critical business data from networks will be costly and harmful to any organization. However, these malicious actions are far from the worst-case scenario of a successful cyber-

attack. During the last stage of a cyberattack, the hacker is no longer studying networks but actively causing damage.

During Stage 3 of a cyberattack, the hacker could make a machine or network resources unavailable to authorized users by temporarily or indefinitely disrupting services on a host. This is typically called a Denial of Service (DoS) attack, which involves flooding a targeted machine in an attempt to overload it with pings. Furthermore, a hacker could unleash

Access Control Software Update

Vanderbilt has announced the release of ACT Enterprise 2.14. The software has added contact traceability reporting to its suite of tools. This enables users to successfully track potentially close contact cases within their building, including doors they may have interacted with. The new release also sees additional benefits added to the software's existing integration with Kone by supporting their latest API calls. Michael Moyna, senior product manager at Vanderbilt, explains: "The big benefit, certainly for large buildings, is that it allows for a large increase in footfall through the elevator system. You can prioritize elevators and make them work efficiently. For example, during morning rush hour the elevator can be configured for optimal utilization to ensure effective throughput." New in this version is video integration with Hanwha's Wisenet Wave system and Dahua. These video additions complement an already rich set of integrations that include Milestones 3XLogic and Hikvision.   **www.vanderbiltindustries.com**

Cameras with 4K and Varifocal Options

Hikvision has announced its new generation of Colorvu cameras for more vivid 24/7 colorful imaging, and has first included 4K and varifocal options in the full-color products. The newly released Colorvu 2.0 cameras offer both Turbo HD (DF8T series/DF3T series/DF0T series) and network products. The enriched series ranges from high performance products to budget friendly choices and smart solutions. In addition, Hikvision has added varifocal cameras (the DF8T-Z series) to the range to create 24/7 color imaging in all focal lengths. With 2.8–12 mm motorized lenses, the varifocal cameras allow users to zoom in on colorful images at night. The cameras' lenses have kept the F1.0 super-aperture design, allowing four times more light to enter the lens than conventional cameras that have F2.0. Hikvision has applied its advanced Active Alignment (AA) Technology to bring the focusing adjustment accuracy to within 4 pixels, even smaller than 1/30 hair diameter.   **www.hikvision.com**

Bert Spiller,
Vice President Product
Creation at Timberland Pro

Dr. Mark Zhu,
Market Segment Manager for
Footwear, Sports and Leisure for
BASF Performance Materials

WORKWEAR

Two Strong Partners

Creating the Next Evolution of Safety Shoes with the Timberland Pro Reaxion

Who said work boots must be boring and uncomfortable? Bert Spiller, Vice President Product Creation at Timberland Pro and Dr. Mark Zhu, Market Segment Manager for Footwear, Sports and Leisure for BASF Performance Materials talk to us about the new Timberland Pro Reaxion safety shoe and help us understand how they are bringing comfort, durability and performance to safety footwear.

GIT SECURITY: What makes the Reaxion such an innovation in the safety shoe market?

Bert Spiller: Well the Reaxion safety shoe features Timberland Pro's proprietary Aerocore Energy System which fuses together the comfort and flexibility of an athletic shoe with the performance and durability of a work boot. We wanted to give workers a new experience – a shoe as appealing as their favorite athletic that provides the energy return to keep them going all day. The Reaxion is offered in both athletic and hiker styles, available in waterproof and non-waterproof options, and comes with a composite safety toe for lightweight protection.

Why did Timberland Pro work with BASF? Why did BASF work with Timberland Pro?

Bert Spiller: We've been working with BASF since 1995 when Timberland adopted BASF's breathable polyurethane foam as a cost effective, higher-performing alternative to EVA for insoles. BASF has over 40 years of experience with footwear materials and offers a unique and integrated toolbox of solutions. BASF and Timberland also share a strong sustainability mindset. BASF's tagline is "We create chemistry for a sustainable future" and it's nice to work with a company that you can challenge to innovate, and they rise to the challenge. BASF has already

provided a bio-based polyurethane material to Timberland for insoles, for example, and we continue to work with them on other solutions.

Mark Zhu: Timberland is a leader and innovator in the footwear industry. And as Bert mentioned, sustainability is also an important link. By 2030, Timberland aims to design 100 percent of its products for circularity and source 100 percent of materials from regenerative agriculture, to push past net zero and have a net positive impact on nature. Why wouldn't we want to work with them?

Most people probably don't think about chemistry when it comes to shoe comfort. How did chemistry drive

innovation in the design of the Reaxion? What's so special about the PU and TPU that BASF creates?

Mark Zhu: The Aerocore Energy System is comprised of three layers: a TPU-wrapped midsole, the Anti-Fatigue Technology footbed, and a non-marking outsole. The layers work together to provide superior energy return, comfort, and grip. These features lead to an especially versatile work shoe, making the Timberland Pro Reaxion ideal for indoor work such as warehousing and manufacturing, as well as outdoor jobs in construction and other fields. BASF's Elastollan TPU is featured in the outsole because of its excellent anti-abrasion and traction performance. Elastopan high-rebound PU foam is used in the midsole and insole to offer all-day support and comfort. BASF was able to tailor the formulation of the PU on the molecular level to give the Timberland Pro team the performance they needed

for their new Reaxion safety shoe. The ability to understand the customer needs and translate that into a material solution is an expertise of BASF.

Will the Aerocore system be seen in future shoe models from Timberland Pro?

Bert Spiller: Definitely.

Where can people buy the Reaxion?

Bert Spiller: In EMEA, the men's shoe is available now. The women's shoe will be available in 2022. In North America, both men's and women's shoes are available online at TimberlandPro.com, as well as at our retail partners across the country.

What was the biggest challenge with the Reaxion?

Bert Spiller: Finding a way to make a shoe that has traditionally been uncom-

fortable and not fun to wear into something that people want to wear all the time. BASF and their material expertise allowed us to make that a reality.

What has the feedback been from wearers of the shoe?

Bert Spiller: The feedback we have received has been very positive. People are telling us that it's the lightest Timberland Pro shoe they have ever tried and the most comfortable. I encourage you to try it and see for yourself.

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The Timerland Pro Reaxion
in different designs

Discreet and reliable fire protection with almost no cables can be provided by wireless smoke detectors that together form a mesh reporting network
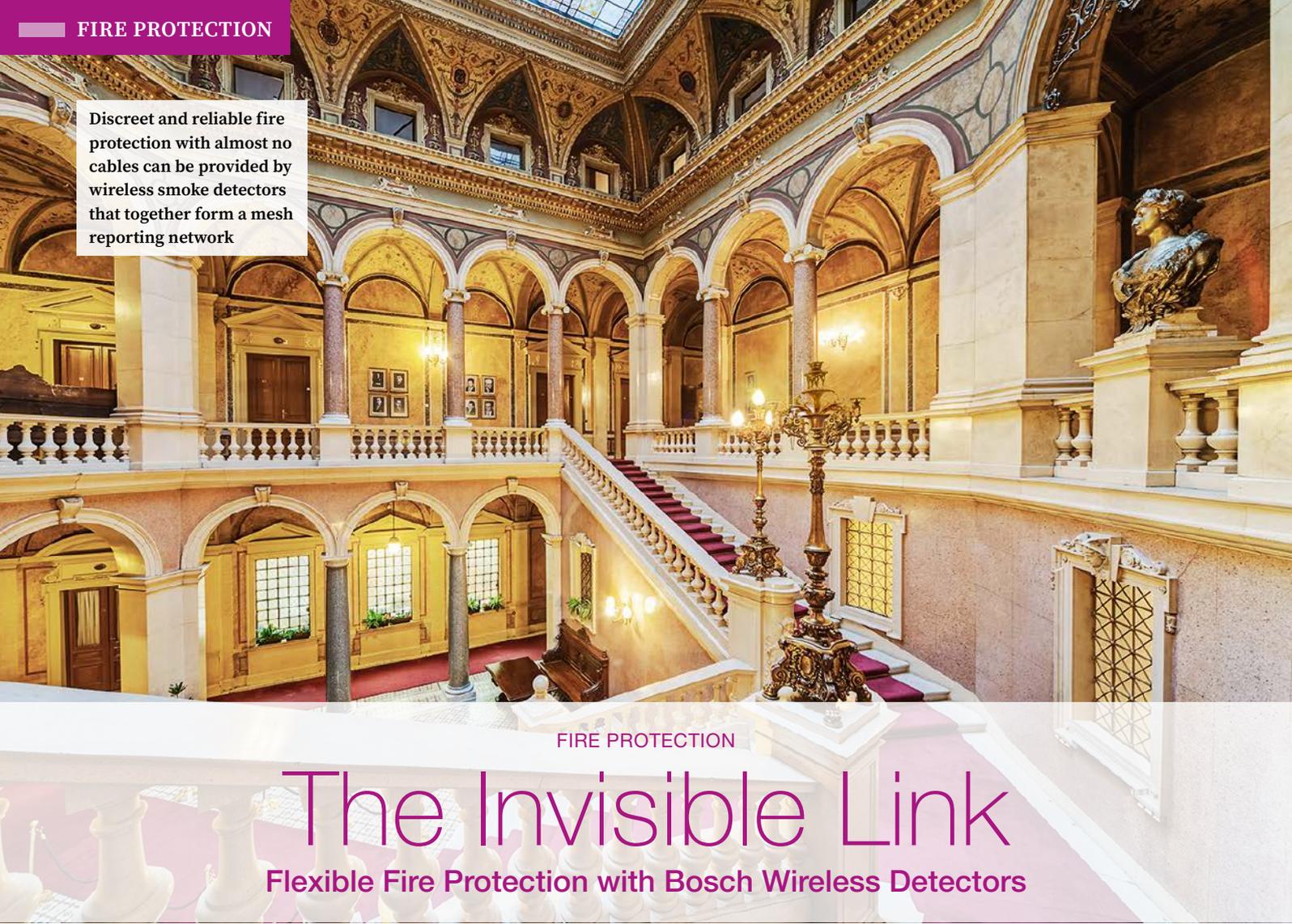
The Invisible Link

Flexible Fire Protection with Bosch Wireless Detectors

With its new generation of wireless detectors, Bosch Building Technologies offers a flexible fire protection solution that works almost entirely without cabling. It is therefore ideally suited for installation in historical buildings, for retrofitting to and the expansion of existing buildings, and also for temporary installations.

Thanks to the combination of two frequency bands and highly reliable mesh technology, the new wireless fire alarm system offers high system availability and maximum protection. The solution consists of a gateway, which is connected to the fire alarm system by cable, as well as up to thirty detectors and ten manual call points, which communicate with the gateway by radio and can therefore be installed anywhere without cabling.

The solution is highly scalable as up to ten gateways can be networked. They are compatible with every Bosch fire panel and can be easily integrated into existing solutions. The gateways are battery-powered and can be configured prior to installation, making commissioning much easier. Installation and configuration are intuitive and fast, and an intuitive diagnostic tool provides easy verification of the entire installation.

Redundancy for Reliability

The detectors are arranged in a mesh topology instead of the conventional star topology. This ensures that redundant connection paths are always available to all devices so that reliable alarming is ensured even if one radio link fails. Each detector acts as a repeater and can forward alarms from other detectors, so radio-based fire detection can now be used even in very large buildings. No direct connection to the gateway is required for this.

The redundancy created through the mesh topology is complemented by the use of two radio bands to ensure reliable operation even in the event of interference on one frequency. In this case, switching takes place automatically. Both radio bands can be used without restriction throughout Europe. The new wireless solution uses EN54-certified multi-sensor detectors with optical and thermal sensors.

The main areas of application are hotels, town halls, shopping centers and temporary installations, for example in exhibition halls. Thanks to its redundant configuration, the radio-based solution is also suitable for challenging applications in which radio has often caused problems in the past, for example environments where many walls could interfere with or block the radio signal.

CONTACT

Bosch Building Technologies
Building Technologies
www.boschsecurity.com
www.boschbuildingtechnologies.com

5G NR EMF Measurements

Good news for all users of the Selective Radiation Meter SRM-3006 from Narda Safety Test Solutions. Looking at the new requirements for 5G NR, mobile network operators, organizations, private measurement service providers, and public authorities can also use their tried and tested 9 kHz to 6 GHz SRM-3006 for code-selective measurements of 5G signals. The EMF test and measurement specialist offers a software option for the device to enable code-selective measurement of 5G signals in frequency range 1 (FR1). This is similar to the well-known software options for UMTS and LTE. The hardware of the industry standard instrument for standard-compliant selective detection and evaluation of high frequency electromagnetic fields (EMF) remains unchanged. There is a newly developed downconverter antenna for the upper frequency range FR2 (> 24 GHz). The antenna will downconvert the upper 5G FR2 frequency band to enable the SRM to show the correct frequency easily. **www.narda-sts.com**

More Than Just Doors

The Assa Abloy eCLIQ cylinder range brings more than just doors into an access control system. In a recent survey for the company, respondents identified a need for access control beyond the door – at 'non-door' points such as gates, cabinets, lockers and machinery. The system's vast range of wireless cylinders fills these important security gaps, ensuring diverse assets and the people who use them are kept as safe as possible. When mechanical locks are exchanged for eCLIQ cylinders, access to all areas and assets is managed from the same interface. The fully electronic, intelligent cylinders can lock many more kinds of opening than just doors – they can protect lifts, server racks, furniture, sliding doors, mailboxes, cabinets and more with the same level of control as sensitive doors. **www.assaabloyopeningsolutions.com**

Eight Port Industrial Ethernet Switch

Synaps V is a powerful eight-port Ethernet switch with two SFP ports, buffered by a Li-Ion backup battery to eliminate transients and power outage. Alarm functions can be programmed and communicated through a webserver or SNMP. Video protection functions like multicast management (IGMP) or VLAN, as well as the integration of additional customer equipment in the large internal space offer multiple project solutions. To gain time, a configuration tailored to specific needs can be ordered, and fully CE approved. The unit is very easy to maintain without removing devices or equipment from the pole. **www.slat.com**
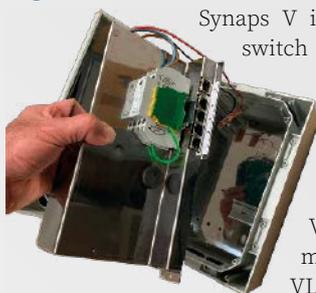
EN54-13 approval for Fire Detection System

Comelit's dedicated fire division has achieved the stringent EN54-13 standards for its Analogue Addressable Fire Detection System. The Italian security specialist has a range of specialist fire solutions, including conventional systems that are particularly suited to fire detection in smaller facilities and buildings with simple layouts. The company's Atena addressable panels can identify the precise location of a fire. Comelit's fire business development manager, Mandy Bowden, said, "Those operating in the fire sector will be aware of the need to provide evidence that a complete system will function as intended under all expected operating conditions. EN54-13, also known as British Standard BS 5839 Part 1, is a rigorous system test procedure that goes beyond any individual standard. Complying demonstrates how our products exceed the requirements to satisfy the CPD/CPR, operating as a full fire detection and alarm system and not just as a sum of components. **www.comelitgroup.com**

Battery-Free Digital and Mobile Locking in Canada

Digital locking company iLoq is fulfilling its growth strategy, this time by extending its operations across the Atlantic to Canada. The company's keyless locking solution, where an NFC-enabled smartphone acts as both a key and a power source, enables utilities providers to focus on core business by managing and maintaining sites, not providing access to them. iLOQ's solution increases operational efficiency and lowers operational expenditure by consolidating numerous unmonitored critical equipment sites into one user-friendly, customized software platform. **www.iloq.com**

GIT SECURITY AWARD 2021 for Access Terminal

In a broad public vote, the Intus 1600PS-II biometric access terminal won the most votes and was awarded 1st place in the GIT SECURITY AWARD 2021 in Category D: Access, Burglary and Perimeter Protection. The GIT SECURITY AWARD is announced annually in five categories, the nominated products are evaluated by the readers of GIT SECURITY. The Intus 1600PS-II biometric access terminal combines security and convenience and complements a standard RFID control system wherever particularly high security requirements are required, such as for the protection of data centers and research departments. The biometric feature of the hand vein pattern is recognized as forgery-proof with a FAR rate of 0.000.08 %. For the highest security requirements, 2-factor authentication against PIN or card is additionally combined. Intus PS hand vein recognition can be connected to access control centers of third-party systems. **www.pcs.com**

Historic Fire Protection

Siemens Technology Protects the Cultural Heritage in Chartres Historic Center

© Wilmotte & Associés

Siemens Smart Infrastructure is providing the fire safety and building comfort solutions for the city hall where the city of Chartres in northern France is carrying out some modernization and adding a new administration building. Reliable protection for the ancient building against fire hazards is crucial as it is an integral part of the historic town center. The city is known for its 12th-century cathedral, a UNESCO world cultural heritage site.

A new administration center is being built in Chartres to accommodate the reorganization of the municipal services for the city. This project includes modernizing the Hôtel Montescot and constructing a new 12,000 m² service building. Nineteen reception counters of Chartres City Administration and other municipal facilities, currently spread over eleven different locations, will be combined at a single site.

Siemens Smart Infrastructure won the contract to install a fire safety system with alarm devices as well as a solution to control the lighting and HVAC (heating, ventilation, air conditioning) systems. The systems make a vital contribution to the safety of the buildings and to the energy efficiency of the new municipal administration center. Siemens was already involved at the design phase of the project, which provided the company with insights into the specific requirements of the location and its potential uses early on.

Historic Building Fabric

Fires in historic buildings are devastating on two levels: the fire alone can wreak major destruction, but the subsequent damage can be just as serious if the fire is extinguished conventionally using water. Historic buildings impose yet another requirement on modern fire safety solutions: their installation should interfere as little as possible with the building itself. To meet this challenge, Siemens equipped the buildings in Chartres with their Sinteso fire detection and safety system. The installation includes an FC2060 control panel with twelve buses and wireless detectors. This technology doesn't require channels in the walls for cables, therefore preserving the original paintwork and moldings of the historic building. To minimize damage in landmarked areas, a multiple fire zone scheme was adopted in order to prevent the spread of any fire.

The basement floors housing the archives and the IT rooms were equipped with the Sinorix CDT nitrogen extinguishing system featuring directional valves controlled by an XC1003 panel. This extinguishes fires by displacing the oxygen, which causes far less damage than using extinguishing water. In addition, the solution is environmentally friendly, and the nitrogen concentration needed to extinguish a fire is not harmful to humans. In case of a fire, the historic building can be preserved and the archived documents and IT systems sustain no damage. Once the fire is out, processes can be restarted virtually immediately, minimizing operational losses even in serious cases.

"Landmarked buildings have special requirements that we were able to meet using wireless technologies. This leaves the 17th-century architecture intact. Siemens has been installing fire safety systems in these types of buildings for nearly 20 years. We understand the constraints and have tailored our offering to the specific conditions of these sites to protect them as

well as to ensure the safety of visitors and employees," said Henning Sandfort, CEO of Building Products at Siemens Smart Infrastructure.

Presence-Dependent Lighting

Desigo Room Automation (DRA) was selected for building climate control, which provides efficient adjustment of room brightness and temperature. A total of 34 DRA PXC3 room automation stations are connected via DALI lines to the lighting system and via the KNX protocol to RXM control units managing 230 chilled beams.

The system features integrated presence and brightness sensors distributed throughout the building that adjust the lighting and temperature in real time depending on room occupancy. In addition to lighting, the system from Siemens also delivers highly accurate energy management and fine-tuning of all heating, ventilation and air conditioning plants. This system also controls the boiler, two heat exchangers, fifteen air handling units, two chiller plants and three heat pumps.

Certificate for Environmental Compatibility

"The Desigo system provides the desired autonomy to adjust the brightness levels and energy comfort in the building. The Desigo room automation system monitors the room brightness and temperature based on different scenarios. This solution also prioritizes the use of natural light and modifies energy demand according to internal conditions," explains Sandfort. The new administration center in Chartres has received the HQE certification for high environmental quality from the Organisation Certivéa, the French certification authority for commercial buildings.

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Company Index

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ALARM MANAGEMENT

Facility Security

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ABUS Security-Center is a manufacturer of innovative alarm systems, video surveillance systems, door intercom systems and detectors. As a member of the ABUS Group, the company is specialised both in industry-specific security requirements as well as the demands which private users have.

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Name:
Dr. Anja Opitz

Position, Company:
Head of Section for International Politics & Security at APB Tutzing and President of the Global Health Security Alliance (GloHSA)

Hometown:
Starnberg near Munich, Germany

1. **Right now: I am** blessed and grateful.

2. **When I'm stressed I** try to take a break at Canary Island La Palma.

3. **I can never resist** good music and dancing.

4. **At 7 o'clock in the morning I** love to enjoy 10 minutes of silence and a good coffee.

5. **The best decision in my career so far is** to combine the topic of health with security.

6. **The best compliment anyone has ever given to me is** that as a professor at university I am "hard but fair".

7. **The biggest challenge for me/my industry at the moment is** to establish a comprehensive and cross-sectoral approach to deal with global health and security.

8. **From the first money I earned I** flew to the US.

9. **My first car/bicycle was a** BMW Mini.

10. **I had the opportunity to shake hands with** Margaritis Schinas, EU Commissioner and Vice President of the EU Commission during the 2020 Munich Security Conference. We were on a panel together to talk about European Security and Defence.

Off the Record

Get to Know Inspirational Characters of the Security Industry in GIT SECURITY's Series

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