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Top 50 Global Security Manufacturers Ranking

Security Technology Maturity & Suitability Index



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Special Feature

Security 50: Optimism prevails as security returns to growth trajectory

Looking back at 2023, we can see the security industry operated in a world that saw overall growth. According to the World Bank, the average gross domestic product (GDP) for the world in 2023 grew 2.6 percent year-on-year. For advanced economies, the United States performed more prominently than the rest, rising 2.5 percent year-on-year. Emerging markets and developing economies gave a satisfactory performance, growing 4 percent in 2023. In particular, China's GDP grew 5.2 percent year-on-year.

• BY William Pao

Growth trend seen

The positive sentiment is also felt in this year's Security 50. This is in stark contrast with last year when a majority of Chinese companies on Security 50 registered 2022-2021 revenue declines due to various internal and external challenges. Looking at this year's list, we can clearly see that Chinese companies are experiencing a rebound, in keeping with China's positive economic performance in 2023 on such factors as a rapid economic recovery post-COVID, government stimulus to boost demand in various sectors and satisfactory export growth.

2024 yearly review

As for this year, the consensus is that the security industry will continue to see growth. This is more or less corroborated by our findings, which show that for companies that provided 2024 H1 revenue figures, most of them are registering a year-on-year growth. This is indicative that security is finally experiencing a "return to normalcy" following COVID.

"In 2024, the security industry showed substantial growth, with the market returning to a sense of normalcy. i-PRO experienced consistent double-digit growth, and the sentiment was positive across the Americas, EMEA, and APAC regions. This growth was driven by our strategy to enhance engagement with system integrators and make AI edge computing technology a standard across most of our lineup," said Gerard Figols, Chief Product Officer at i-PRO.

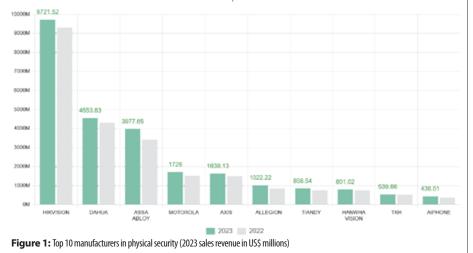
"The security systems integration industry saw many factors that contributed to growth, including an increased focus on physical and cyber security integration, a rising demand for cloud-based security solutions, growth in smart building technologies and IoT integration, continued modernization of systems and expanded adoption of AI and analytics – all contributing to enhanced security capabilities for streamlined processes and better efficiency, scalability and flexibility," said Eric Yunag, EVP of Product & Services at Convergint.

Indeed, growth in security this year has largely been driven by rising demands for advanced technologies, especially cloud and AI.

"A significant growth driver has been the increasing adoption of cloud-based solutions and SaaS models. This shift, which has been gaining traction for some time, is now fully underway, with larger enterprises leading the movement toward cloud or hybrid deployments. Additionally, the demand for artificial intelligence (AI) and Intelligent Automation (IA) solutions is becoming more prominent in security, although much of the current AI-related hype still needs to deliver concrete results," said Despina Stamatelos, Senior Commercial Manager at Genetec.

"Cloud and AI are not new trends, yet we are observing changes due to increased adoption and customer recognition whereby the channel, in particular integrators/installers, are transforming their own businesses to best sell these technologies," said Jon Cropley, Principal Analyst, and Josh Woodhouse, Founder, of Novaira Insights. "For example, systems integrators are selling cloud solutions, packaging VsaaS and/or ACaaS with their own managed services, beginning to transition their own business models to recurring revenues. In the short to medium term these types of changes will have a greater impact on the industry overall than manufacturers integrating more cloud or AI into their products."

Edge AI solutions, meanwhile, should not be ignored, either. "Edge-based AI analytics and cloud solutions were prominent technologies in 2024. One of



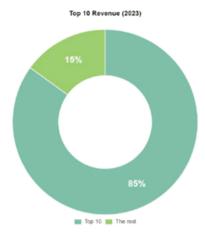


Figure 1: Top 10 manufacturers accounted for 85% of the total Security 50 revenue

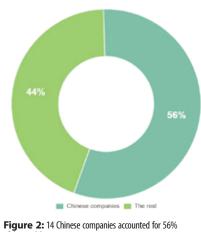


Figure 2: 14 Chinese companies accounted for 56% of the total Security 50 revenue

the challenges for cloud-based use cases is that transferring video data to/from the cloud can be costly. Performing AI-based analytics solely in the cloud adds to this cost and can add unacceptable delays, which is why edge-based analytics processing is essential. Processing AI-based analytics within the camera on uncompressed images increases accuracy while ensuring that only the lightweight metadata describing events and attributes is transferred to the cloud for further analysis," Figols said.

Notable M&A cases

This year also witnessed some notable merger and acquisition cases as the



Special Feature

industry continued to consolidate. These include Vitaprotech Group's \$145 million acquisition of the security business of Identiv; Honeywell's \$4.95 billion acquisition of Carrier's security business, which included LenelS2 (the deal was announced in December 2023); and Milestone's mergers with BriefCam and Arcules – deals that combined the companies' strengths in video management software, video analytics and VSaaS to deliver complete video security solutions for users in different scenarios.

"2024 has been a year of major mergers and acquisitions in the security sector. Notably, leading security companies have aggressively pursued deals with AI-driven analytics firms, enhancing their capabilities in predictive surveillance and automated threat detection. For many in the industry, this consolidation trend has proven beneficial as it has accelerated the deployment of innovative technologies and helped streamline the development of more integrated solutions," said Aditya Khemka, MD of CP PLUS.

Ongoing challenges

Despite the positive outlook, certain challenges still linger. One of them is the continued rampancy of cyberattacks, some of which were launched using networked security devices.

"The threat of cyberattacks has not decreased during 2024, with more high-profile breaches, major data hacks, and more warnings about the potential for sophisticated attacks sponsored by hostile

states. So, cybersecurity remains one of the biggest challenges facing the security sector," said Alex Lee, Senior Sales Manager at IDIS. "Addressing this challenge requires comprehensive data protection strategies and robust physical security measures. For video technology vendors and suppliers, designing cybersecurity into their surveillance devices and software that encompasses multi-layered defenses is vital."

Meanwhile, stricter regulations regarding data privacy, particularly for AI-based facial recognition and behavioral analysis technologies, have posed additional hurdles.

"Companies in 2024 have had to navigate complex legal landscapes while ensuring their solutions remain both compliant and effective. Moving forward, these challenges are expected to persist," Khemka said. "Nonetheless, at CP PLUS, we believe that while the challenges are formidable, they have also presented opportunities. The focus on innovation has led us to partner with tech giants that bring different perspectives to solving these issues. We are also trying to adopt collaborative efforts with governments and regulatory bodies to help shape policies, thus ensuring smoother compliance."

Yunag cited the following as some of the challenges facing the industry: labor shortages and skill gaps within the workforce, supply chain inefficiencies, rising budget restrictions, and increased security concerns regarding critical infrastructure. "These concerns are especially prevalent as many organizations still rely on complex, traditional security system architectures. While these challenges are likely to continue into 2025, leaders can look to overcome them by developing highly customized training programs to ensure their employees are upskilled on the latest skills and technol-



ogies, implementing innovative security program strategies to help streamline daily processes, and strengthening industry relationships and partnerships to modernize system integration capabilities," he said.

Finally, regional conflicts - in particular the wars in Ukraine and the Middle East - have also created an impact, bringing opportunities as well as risks. "Regional conflicts had a noticeable impact on the security industry. Demand for surveillance systems increased, particularly in sensitive areas such as critical infrastructure. The conflicts increased the need for fast, AI-supported surveillance solutions for real-time threat detection. In addition, higher government spending on defense and security supported market growth," said Thomas Lausten, CEO of MOBOTIX.

"The international order is less stable now than at any time since the end of the Cold War, with devastating regional conflicts and the growing threat of worse to come," Lee said. "For businesses and governments, the negative consequences are multiple and varied and hard to predict. Still, they are perhaps best summed up as increased instability, less foreseeable risks, and potentially far worse harm. From disruption to global shipping to the impact of forced migration, from increases in international tension leading to the imposition of tariffs to the development of new weapons and new ways of waging war, we are living in a more dangerous world."

That said, businesses need to diversify their supply bases and adopt more flexible manufacturing strategies to overcome this challenge.



Scan the QR code to find out what experts predict for the security industry in 2025. One of the most-read and longest-running industry ranking for video surveillance & access control



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Dates announced for Secutech 2025, show set to inspire innovation in security technology

Secutech, the landmark event in Asia's security industry, is set to take place from 7 - 9 May 2025 at the Taipei Nangang Exhibition Centre. Building on the success of previous editions, Secutech 2025 promises to amplify the momentum of its predecessors, reinforcing its role as a vital hub for business and technology. Expecting around 300 exhibitors in total, the fair's organiser is also anticipating a diverse array of visitors, attracted by the showcase of ground-breaking solutions and the opportunity to foster industry collaboration.

he global IoT security market is experiencing significant growth, projected to expand at a compound annual growth rate (CAGR) of 12.4%, reaching approximately USD 61.6 billion by 2028.¹ This growth is driven by widespread adoption across sectors including manufacturing, logistics, and healthcare, amid increasing concerns over cybersecurity threats. Taiwan's emphasis on developing smart cities and advanced security solutions places it as a key player in the global market landscape, with Secutech poised for participants to harness domestic and international market potential.

Ms Regina Tsai, General Manager, Messe Frankfurt (HK) Ltd – Taiwan Branch, stated, "Secutech has established itself as a crucial technology platform for security, IoT, and AI integration. With Taiwan's security market growing steadily and its heightened focus on cybersecurity, we see significant opportunities for innovation and collaboration. The fair will showcase a wide range of advanced solutions, including AI-driven surveillance systems and smart access control. Having already attracted leading exhibitors from across categories, next year's show will be the ideal platform for buyers to discover market-ready technologies that meet the evolving demands of diverse sectors."

¹ loT security market analysis with growth forecast during 2024-2032. https://www.taiwannews.com. tw/news/5892732 Retrieved 15 October 2024.



Across the fairground, products and solutions will be categorised under six key themes, allowing exhibitors and visitors to effectively engage with innovative technology solutions:

6 featuring solutions

01 Al-empowered security

Intelligent surveillance, gate control, VSaaS, security solutions, AloT security

02 Al application

Smart logistic, smart transportation, smart retail

03 Intelligent building & Smart home

Building safety, smart home, environmental sustainable development

04 Smart factory

Industrial facility safety, occupational safety

05 Smart fire & Disaster prevention

Firefighting technologies, smart disaster prevention, industrial facility safety & occupational safety

06 IoT cybersecurity

Highlighting essential cybersecurity concerns for connected devices



Global market review & forecast

Security 50 Roundtable: Industry insights from top security companies



E ach year we at asmag.com compile the Security 50 report listing the top companies in security and exploring the latest developments in the industry. So how did security fare this year? Will growth be seen in the near term? And how do companies adjust themselves to the latest trends? We invited some of

our Top 10 companies to share their views in this Q&A session, featuring insights from Hikvision, Dahua Technology, Axis Communications and Hanwha Vision.



Scan the QR code to get insights.

Video Surveillance Market

The video surveillance market is being driven by AI-powered analytics, cloud solutions, and smart city initiatives. In Asia, there's a surge in demand for intelligent systems in sectors like retail and healthcare, where AI enhances efficiency and accuracy. Europe places a strong emphasis on regulatory compliance and data privacy, with organizations seeking sustainable solutions. Meanwhile, America focuses on integrating video surveillance



with IoT technologies to boost security and operational efficiency, particularly in retail and urban environments.

Access Control Market

The access control market is evolving with biometric technologies and mobile solutions. In Asia, facial recognition and contactless biometrics are gaining traction, supported by government initiatives and a focus on data privacy. Europe emphasizes interoperability and GDPR compliance, with advancements in cloud-based systems and mobile credentials enhancing user experience while ensuring data security. In America, the trend leans toward integrated systems that combine access control with other security measures, driven by increasing demand



for seamless security solutions and regulatory compliance.



Scan the QR code to access the full report.

Near-term growth for security equipment, services: SIA, ASIS & OMDIA

Physical Security Services Market: CAGR of 6.9% from 2022 to 2026 ccording to the report, titled "Complexities in the Global Security Market: 2024 through 2026, the physical security equipment market is expected to hit a value of US\$60.1 billion in 2024, up from \$51 billion in 2022 and \$56 billion in 2023. Furthermore, the value is expected to rise to \$70 billion by 2026, translating into a compound annual growth rate of 8.2 percent from 2022 to 2026. The report also finds the security industry is a major employer in the jobs

market and will continue to be impacted by technology trends such as AI and cloud. This article takes a closer look at some of the key findings in the report.



Scan the QR code to access the full report.



2024 Tech trends maturity and suitability index survey

The "2024 technology trends maturity and suitability index survey," sponsored by ZKTeco, provided not only insights into the technologies important for video security and access control, but also customer interest and demand as well as growth prospects in the near term.

• BY William Pao

Cloud/hybrid architecture

Video surveillance as a service (VSaaS) and access control as a service (ACaaS), which are increasingly adopted by security players, show little change in terms of suitability and maturity this year as compared to 2023, even though ACaaS ranks No. 1 for access control technologies with huge growth potential (full results can be found in the access control and video surveillance articles).

It's worth noting that the hybrid architecture has received higher scores of 4.03 on suitability and 3.7 on maturity. In terms of customer inquiry and growth potential, hybrid ranks No. 4 and No. 3, respectively. Based on the results, we can see that the cloud momentum is still there, and this is especially the case for hybrid cloud, which distributes processing/storage between on-prem and cloud.

"Hybrid architecture is gaining popularity because it combines the best of both on-premise and cloud-based systems. It allows organizations to retain local control of their most sensitive data while leveraging the scalability and convenience of the cloud for broader management. This dual capability is especially useful for companies with legacy systems that aren't ready for full cloud migration," said Tom Buckley, Co-Founder of Qumulex.

"A flexible hybrid-cloud deployment provides multiple options, ensuring that



regardless of how many systems are running on local servers or connected to the cloud, they can all be brought back to a central head-end for seamless management from a single platform. A hybrid approach also simplifies the transition to cloud-connected systems at a manageable pace, enabling edge devices to become cloud-compatible, adding cloud services to existing infrastructure, and allowing for the development of a long-term strategy that maximizes ROI while avoiding expensive forklift upgrades," said Laurent Villeneuve, Senior Product Marketing Manager at Genetec.

AI/Generative AI

Generative AI refers to artificial intelligence that can create new content based on existing datasets. A potential game-changer for security, generative AI garnered a suitability score of 4.16 and ranks No. 1 in both customer inquiries and growth potential over the next five years.

"Generative AI is gaining a lot of attention in security because of its ability to improve the accuracy and speed of threat detection, as well as its potential to reduce false alarms. By learning from vast amounts of data, generative AI can identify patterns that humans or traditional systems might miss, enabling more proactive security measures. It can also be used to enhance facial recognition, predictive maintenance, and video analytics. While it's still maturing as a security technology, its rapid development and widespread applicability make it a top candidate for investment and adoption in the near future. As it matures, we expect to see more innovative applications that will revolutionize how we approach physical and cybersecurity," Buckley said.

Meanwhile, Villeneuve argues that GenAI can also introduce new risks, which



must be properly addressed.

"The rise of GenAI also introduces new security threats, including the proliferation of deep fakes and vulnerabilities in foundation models, which are trained on vast amounts of publicly available internet data. These models are increasingly becoming targets for adversarial attacks, such as efforts to introduce malicious data into the models' training datasets. The security industry, in particular, must be vigilant in identifying and mitigating these emerging risks to ensure the integrity and safety of its systems. If implemented correctly, this can lead to faster response times and more efficient investigations, ultimately improving overall operational effectiveness," he said.

Edge processing

In terms of edge processing, it gained a suitability score of 4.3 and a maturity score of 3.86. In terms of customer inquiries, it ranks third. The high suitability score reveals that users enjoy the benefits offered by edge processing, where data is processed on the edge – only metadata is transmitted to the backend for further processing. This allows for better utilization of bandwidth

and quicker response to incidents. The increasing availability of AI cameras where video can be processed on the edge also helps drive this trend.

Cybersecurity

Cybersecurity received suitability and maturity scores of 4.39 and 3.91, respectively. It also ranks No. 2 in both customer inquiries and future growth potential. The results reflect the growing importance of cybersecurity amid high attack rates. According to Broadcom, connected cameras accounted for 15 percent of all IoT attacks. A US News and World Report survey further shows 13 percent of respondents have experienced camera hacks, while 49 percent are worried about them. This has prompted vendors to design their products with cybersecurity in mind. Gallagher, for example, has launched their Controller 7000 with enhanced hardware and security infrastructure to optimize cybersecurity. Video surveillance equipment manufacturers are increasingly highlighting NDAA compliance where no key parts of components are made in China. With hacking and security breaches becoming more rampant, discussions and awareness

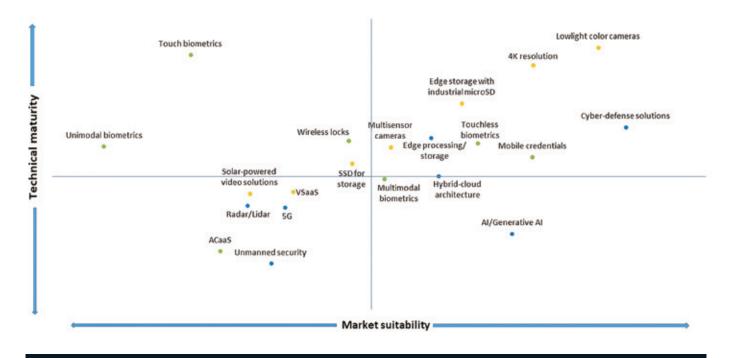
over cybersecurity are all but likely to continue.

Unmanned security (drones and robots)

As for unmanned security such as drones and robots, it scored moderate suitability and maturity scores of 3.7 and 3.34, while ranking fourth in terms of growth potential in the near term. Unmanned security has been a much-discussed topic a few years back, yet user interest and enthusiasm seem to have diminished a bit. However unmanned security still has useful applications, especially in critical mission scenarios where monitoring by fixed cameras is insufficient. Mitsubishi, for example, has teamed up with 3S to offer a fire-prevention solution where drones are flying with both visible and thermal cameras, the latter of which can detect small fire points, which can escalate into largerscale fires.



Scan the QR code to access complete survey results for video surveillance and access control technologies.



The dual edges of AI: Analytics at the edge and in the cloud

The rapid advancement of artificial intelligence (AI) and machine learning (ML) technologies is reshaping the landscape of physical security.

• BY Prasanth Aby Thomas, Consultant Editor

population of the edge signifies a crucial shift towards more immediate and localized security measures. By processing video data directly where it is captured, edge solutions enhance real-time response capabilities and operational efficiency.

This approach offers significant benefits, particularly in environments where quick action is essential to mitigate threats. However, it also presents unique challenges that must be managed to fully leverage the potential of edge computing in security settings.

Deploying video analytics solutions at the edge enables a swift response to potential security threats. Matt Tengwall, SVP and Global General Manager of Fraud & Security Solutions at Verint Systems, highlights this advantage, particularly for sensitive environments like banking.

"Deploying video analytic solutions at the edge, where data is analyzed directly at the source, offers an opportunity for

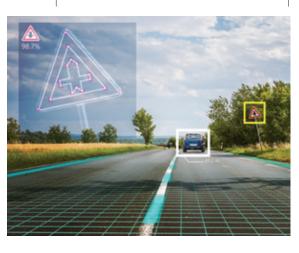
rapid response and immediate threat detection," Tengwall said. "This is important for banks that require quick analysis of incidents at ATM or branch entrances."

Tengwall, however, points out the logistical hurdles, saying that, "managing these edge devices can be complicated and lead to more expensive maintenance as each device has to be managed and maintained separately."

Distinct from cloud AI

Edge AI technology in video analytics is pivotal in enabling smarter, more responsive security systems by leveraging machine learning and deep learning at the data's origin.

Jason Goldberg, Director of the Global Partner Program at Intellicene, clarifies the common misconceptions about edge AI. "Let's dive into the whole 'Edge AI' conversation because it's critical to understand what it really is - and what it isn't," Goldberg said. "Edge AI is often misunderstood as being synonymous with AI, but it's more accurate to describe it as a blend of machine learning and deep learning. It's about processing raw video right at the source — like inside the camera - before it gets passed downstream. True AI, the kind that mimics human decision-making, requires massive computing power, and right now, it's impossible to pack that kind of power into a camera."



Advantages of edge analytics

Goldberg further discusses the evolution and benefits of edge analytics. "The big win with edge analytics is the speed — they deliver alarms directly from the device to your VMS or PSIM, bypassing the need to send data off-site, process it, and then send it back," Goldberg said. "In mission-critical environments, like airports or critical infrastructure, you can't afford any delays. Relying solely on cloud-based solutions could leave you vulnerable to gaps in coverage if there's even a minor hiccup, like a firewall issue or a brief Internet outage."

The future: a hybrid approach

As the technological landscape of security systems continues to evolve, a hybrid approach that combines both edge and cloud-based video analytics is emerging as the optimal solution.

Goldberg articulates this vision, as "a future where organizations use a blend of edge and cloud-based analytics — edge for handling routine alarms and cloud for more complex analysis, like behavioral patterns and object recognition. This hybrid approach will offer the best of both worlds."

This approach would synergize the immediate responsiveness of edge solutions with the deep analytical capabilities of cloud-based systems, providing a comprehensive security framework.



IoT Security

Securing surveillance data in an IoT World: Cybersecurity challenges and solutions

Video surveillance systems now rely on cloud storage and IoT technologies to capture, process, and store vast amounts of data. This shift has brought new cybersecurity challenges, as sensitive surveillance footage can be vulnerable to hacking, data breaches, and other cyber threats.

• BY Prasanth Aby Thomas, Consultant Editor

Industry leaders are implementing rigorous security measures to address these risks and provide their customers with robust protection for video surveillance data.

Multi-layered security for cloud-based surveillance

For Arcules, a company specializing in cloud-based video surveillance, cybersecurity is a core priority. "Security is in our DNA," said Steve Prodger, Chief Revenue Officer at Arcules.

To protect customer data, Arcules employs a multi-layered approach, partnering with Google Cloud to achieve SOC 2, Type 2 compliance. This ensures rigorous controls for data handling and privacy. Additionally, Arcules integrates multi-factor authentication (MFA), role-based access control (RBAC), and single sign-on (SSO) with providers like Google, Okta, and Microsoft to restrict unauthorized access.

In addition to external measures, Arcules emphasizes internal IT hygiene, reinforcing security at every level of the organization. This comprehensive approach gives customers "24/7 peace of mind," knowing their video surveillance data is protected by multiple layers of defense.

ISO 27001 certification and rigorous protocols

Intellicene, another key player in video surveillance, has achieved ISO 27001 certification, highlighting its commitment to managing information securely. "The process highlighted the importance of establishing strong information security practices to support the comprehensive security requirements of our customers," said Tracy Markum Vice President of Sales at Intellicene.

Markum explained that Intellicene has implemented 29 policies, procedures, and controls to manage potential risks, covering various aspects of data security, including access controls, incident response, and ongoing monitoring. This set of protocols serves as a roadmap for maintaining strong data protection measures in an IoT and cloud environment.

Cloud storage advantages and scalable security solutions

Cloud storage has become a preferred option for video surveillance data due to its scalability and security benefits. "Storing video surveillance data in the cloud offers increased security by reducing the risk of data loss or theft from physical damage or tampering," Takahashi said.

Netwatch's approach leverages automatic backups and encryption, ensuring that sensitive footage remains secure and accessible to authorized users. Cloud



storage also allows for flexible data retention, enabling organizations to store large volumes of video without sacrificing performance during playback or retrieval. This adaptability is essential for clients with varying retention needs, especially in industries with specific regulatory requirements for data storage.

Addressing cybersecurity challenges in IoT environments

IoT-enabled devices add complexity to surveillance systems by increasing the flow of data through multiple networks, which can introduce vulnerabilities. Companies like Arcules and Intellicene are tackling these risks through robust access controls, encryption protocols, and secure integrations.

Navigating GDPR and video surveillance: Balancing privacy and security

As video surveillance technology becomes more widespread in urban environments and businesses, the need to balance security with privacy has become critical.

• BY Prasanth Aby Thomas, Consultant Editor

egulations like the General Data Protection Regulation (GDPR) in Europe and the California Consumer Privacy Act (CCPA) in the United States are reshaping video surveillance, requiring companies to balance privacy and security.

Privacy by design: shaping the future of surveillance

The rise of GDPR and similar privacy regulations has led to a fundamental shift in video surveillance design. Many companies are now adopting a "privacy by design" approach, embedding privacy features into their products from the start.

"Over the past few years, we've seen industry leaders rethink their strategies and be more proactive in ensuring that their video solutions are compliant with GDPR and CCPA regulations," said Tracy Markum, Vice President of Sales at Intellicene.

This change ensures privacy is a



fundamental part of technology, not an afterthought. Privacy regulations like GDPR emphasize minimizing data collection and controlling retention periods. Companies are required to manage collected footage carefully, storing it securely and limiting access. These constraints push companies to innovate in how they design and manage surveillance systems, ensuring they collect only the necessary data.

Consent and transparency: building trust

GDPR and CCPA are built around principles of consent and transparency, requiring companies to obtain explicit permission before recording individuals and clearly inform them about data usage.

Kurt Takahashi, CEO of Netwatch explained how these principles have driven a change in how companies communicate with clients and users. "Regulations like GDPR and CCPA impose strict requirements on video monitoring service providers regarding how providers can collect and use client data," said Takahashi.

To address this, some companies are using anonymization technologies or blurring faces until they have authorized access, helping maintain security while respecting privacy.

Managing data: security and retention standards

GDPR requires robust data security measures to protect the collected footage.

This has led video surveillance companies to adopt stronger encryption, secure storage solutions, and strict access controls to comply.

One of GDPR's critical mandates is data minimization—only collecting what's necessary and storing it for limited periods. Takahashi pointed out that regional data retention standards can vary significantly, and video surveillance providers must adapt accordingly.

To address these challenges, companies are investing in video management systems that enable precise control over footage storage and access. These systems can automatically delete or anonymize data after a set period, reducing compliance risks. Additionally, companies are enhancing cybersecurity measures to guard against breaches, which could lead to fines and reputational damage under GDPR.

Innovation driven by compliance

Although privacy regulations introduce complexities, they are driving innovation in the surveillance industry. Companies like Intellicene and Netwatch are exploring new technologies that meet GDPR and CCPA standards while offering better privacy protection.

AI-powered analytics can detect security incidents without relying on personal data, thereby reducing the collection of sensitive information. Privacy by design is reshaping video surveillance, enabling smarter, privacy-conscious solutions.



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Beyond visible light reader survey: Technology adoption and usage

This is the first article in a 2-part discussion of the results of the asmag.com-Hikvision survey, "Beyond visible light," which explored the adoption rates, market demand, usage and future potential for four key non-visible light technologies: thermal imaging, audio, x-ray and millimeter radar.

• BY Emily Lin and William Pao

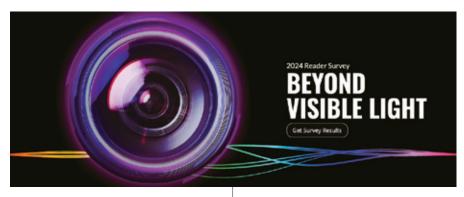
Traditional cameras have limitations in their ability to monitor and detect in challenging conditions such as darkness, fog, or other visual obstructions. By tapping into the non-visible light spectrum, these technologies enhance monitoring capabilities by detecting heat signatures, movement and details that would otherwise go unnoticed. This opens up new opportunities in fields like healthcare, industrial inspection, and environmental monitoring.

Key findings

Thermal imaging and audio lead in non-visible light tech deployment

Survey data shows that thermal imaging (72%) and audio technology (57%) are the most widely deployed technologies by respondents, followed by X-ray technology (31%) and millimeter radar technology (29%).

While X-ray and radar technologies are gaining traction, their adoption rates remain lower than thermal and audio



solutions. Factors such as cost, complexity and regulatory restrictions may contribute to this. As these challenges are addressed and technological advancements continue, we can anticipate further growth in the adoption of X-ray and radar in various sectors.

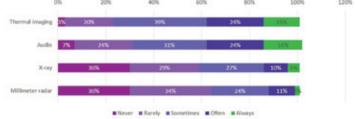
Customer demand alignment with current market deployment

Customer demand seems to align closely with the technologies being offered, especially for thermal imaging and audio solutions. Survey data shows that thermal imaging has the highest level of inquiries, with 15% of respondents indicating that they are always asked about it, 24% often and 39% sometimes. Similarly, audio technology also sees strong demand, with 16% reporting that it was always requested and 24% often. These figures suggest that the market is effectively meeting customer needs for these two technologies.

However, demand for X-ray technology and millimeter radar outpaces their current deployment. While 42% of respondents receive inquiries for X-ray (5% always, 10% often, 27% sometimes), only 31% of solutions providers offer it. Similarly, millimeter radar is requested by 37% of respondents (2% always, 11% often, 24% sometimes), but only 29% offer it. This suggests that while customer interest is growing, existing challenges are limiting deployment. The gap suggests a potential opportunity for vendors to expand their offerings if they can address these

Which technologies are you offering or have deployed in your business/projects?

business/projects?		
Technology	Percentage	
Thermal imaging	72%	
Audio technology	57%	
X-ray technology	31%	
Millimeter radar technology	29%	





challenges effectively.

Security remains the primary reason for adoption

Across all technologies, security remains the primary reason for adoption. A significant 69% of respondents cited the need to enhance detection in low-light or challenging environments as a key motivator, with 49% focusing on proactive threat detection and management and 41% seeking to improve situational awareness through multi-dimensional perception.

Interestingly, the survey results showed that there is a growing trend toward expanding applications beyond security, with 41% of respondents indicating this as a reason for adoption. Moreover, another equal percentage (41%) cited the need to meet customer requests and project requirements. This correlation suggests a customer-centric approach in the industry, where providers are responding to specific client needs and preferences.

Technology insights, applications by industry

Thermal technology

Security/perimeter protection remains the primary application for thermal imaging, accounting for 86% of responses. Other top applications include early fire and smoke detection (65%), industrial equipment monitoring (53%) and body temperature monitoring (43%). These applications align with the unique capabilities of thermal imaging, which detects objects based on their heat signature.

The top five verticals for thermal imaging

deployment are energy infrastructure, factories, transportation, healthcare, and office/corporate buildings. This is consistent with its ability to improve situational awareness and detect potential hazards. For instance, in energy infrastructure, it can also be used to monitor equipment overheating.

Audio technology

Security ranks a solid No. 1 (88%) as the primary application for audio technology. Indeed, audio solutions such as intercoms, public address systems and warning messages have been deployed for security purposes for many years. Today, audio and video surveillance can be integrated, enabling warning messages to be played back on a speaker when a potential intruder/ loiterer is detected.

Non-security applications are also cited, for example, industrial equipment monitoring (47%) and background music (41%). The top verticals for audio solution deployment are retail, factories, energy infrastructure, office/corporate buildings and healthcare. This is not a surprise – retail stores, for example, are known to use PA systems for both security and background music, and factories use audio analytics for equipment monitoring.

Millimeter radar technology

Security and traffic management are the primary applications for respondents, accounting for 81% and 64% of responses respectively. Radar works by emitting signals into the environment and processing the reflected signals to determine the speed, size and distance of those objects. This makes radar ideal for both security and transportation, for use cases such as speed measurement and traffic flow detection.

Due to these advantages, we can see the top verticals for radar deployment are in transportation, followed by energy infrastructure, factories, parking lots and office/corporate buildings. Radar also has healthcare applications, where radar devices can be deployed in hospital wards or nursing homes to detect patient falls without infringing on their privacy. While only 37% of respondents currently cite healthcare as an application, its usage in this sector may increase in the future.

X-ray technology

Based on the survey results, security checkpoints are the most prominent application for X-ray technology, accounting for a significant 93% of responses. This far exceeds the other top two applications: quality control (46%) and industrial processes (37%).

These applications align well with the top verticals where X-ray is most suitable and mature: transportation, energy infrastructure, and factories. This highlights the critical role of X-ray technology in security applications, particularly at airports, train stations, and government buildings. The ability to quickly and effectively screen individuals and baggage for contraband or prohibited items makes it an indispensable tool in maintaining security.



What is the 5-year growth potential for these technologies in security? Scan to read the full report.

What are the primary reasons for adopting these technologies?

tank	Reason	Percentag
1	To enhance detection capabilities in low-light and challenging environments	69%
2	For proactive threat detection and management	49%
3	To expand applications beyond security	42N
4	To meet customer request/project requirements	42%
5	To improve situational awareness through multi-dimensional perception	42%
6	To reduce manpower; for remote monitoring	82%
7	To increase operational efficiency and streamlined processes	32%
8	To comply with industry-specific regulations or standards	17%

Summary: Key industry verticals voted best suited for these technologies

Ranking	Thermal Imaging	Audio	X-ray	Radar
1	Energy infrastructure	Retail	Transportation	Transportation
2	Factories	Factories	Energy Infrastructure	Energy infrastructure
3	Transportation	Energy Infrastructure	Factories	Factories
4	Healthcare	Office/Corporate Buildings	Office/Corporate Buildings	Parking Lots
5	Office/Corporate Buildings	Healthcare	Healthcare	Office/Corporate Building

Sustainability in security: Understanding perceptions, barriers and the path forward

In the face of escalating environmental challenges like global warming and extreme weather events, the push for sustainability has never been more pressing.

• BY Israel Gogol

cross industries, companies are rethinking the ways they design, manufacture and ship products, looking for ways to meet performance and quality requirements while using fewer resources. The security industry is no exception, with sustainability efforts focusing on three key areas: Highlighting energy-efficient product features, using new materials and manufacturing processes, and lastly, reducing plastics and disposables in packaging.

Hot Topic

This shift promises a "triple win" boosting sales, reducing costs, and cutting carbon emissions. However, are these efforts truly sustainable or just greenwashing? And can sustainability also be a sound business decision?

A survey of asmag.com integrators and distributors reveals a mixed picture. Nearly half (47%) of respondents consider green initiatives very important, but over a third see them as unimportant. When asked about their familiarity with such initiatives in the security industry, most responses reflected a superficial understanding.

Moreover, commitment to sustainability often appears declarative rather than actionable. While many view sustainable products as "nice to have," demand remains limited. Buyers typically prioritize price and performance, with sustainability seen as secondary.

Barriers to adoption

Despite the general push towards more



sustainable products, the security industry is still somewhat slow to adopt this trend.

Some might argue that it is not the channel's responsibility, and indeed a study by consulting firm Mckinsey shows that 80 percent of carbon that is tied to a product is locked up in the product design. The manufacturer can make the most impact by adjusting their manufacturing, logistics, operation and maintenance and make the most impact. By the time the product reaches the integrator, there is little that the integrator can do to increase the sustainability of the product. However, distributors and integrators can influence this by making sure the products they choose are the ones that can help achieve sustainability goals.

Another reason for the slow adoption is that there is no shared standard in the industry to verify how sustainable surveillance products or systems are. In addition, existing standards like the ones in place for certification of green buildings, also hardly discuss security systems as part of the certification criteria.

When there is no single and binding

definition of sustainability, there is also no accountability. For example, using solar panels to generate electricity might reduce the use of fossil fuels, but sustainability requires a look at the whole product life cycle. If the manufacturing of solar panels also requires rare minerals and the panels are not always recyclable we are just pushing the problem into the future.

A third challenge for sustainability advocates is to change the image of sustainable solutions from being costly to useful. Sustainable solutions often remove choice and limit options. Buyers either have to believe that the higher price they are paying for a product now will save them money later (e.g., by saving electricity costs), or they have to be willing to pay the higher price in exchange for being more environmentally friendly. Both scenarios require a change in mindset, which is not easy to achieve.



What can integrators and other channel players do to effectively support the push for a sustainable future? Scan the QR code to find out.



Securing the modern building: overcoming key challenges

Hot Topic

Smart building technologies are transforming how commercial spaces function, driven by the need for greater efficiency, sustainability and security. However, managing multiple disconnected systems often creates inefficiencies, security risks and slower response times in critical situations.

• BY Prasanth Aby Thomas, Consultant Editor

ne of the primary challenges commercial buildings face today is the complexity of managing multiple, independent systems. These buildings often rely on separate platforms for essential operations like video surveillance, access control, fire alarms, HVAC, and lighting.

The fragmentation of these systems can lead to operational inefficiencies, higher costs, and slow responses during critical incidents, ultimately affecting the building's performance and security. Disconnected systems require extensive manual oversight, which can strain resources and increase the risk of human error.

Additionally, the growing threat of cyberattacks presents another significant challenge. With buildings becoming more connected through digital platforms, they also become increasingly vulnerable to cybersecurity breaches. The 2024 Gallagher Security Industry Trends Report highlights that many businesses see cybersecurity as a top concern due to the prevalence of legacy systems that often lack adequate protection

The shift towards data-driven decision-making also brings new challenges. While connected systems generate large amounts of

valuable data, many organizations struggle to harness this information effectively.

against modern threats.

There's a need for solutions that simplify data management, enabling them to extract actionable insights for better decisionmaking. However, the complexities of manual data management and limited resources hinder this process, resulting in missed opportunities for optimization.

Another significant challenge is the shortage of skilled personnel to manage complex, interconnected systems. Gallagher's 2024 Trends Report cites that people and manpower dominate organizational challenges across the globe, and despite predicted increases in budget, the lack of skilled technical staff is holding businesses back. Many struggle to find qualified staff for maintenance, troubleshooting, and upgrades, increasing the risk of system failures or security breaches and potentially impacting business continuity.

Finally, the push for sustainability and energy efficiency requires optimized resource usage, yet disconnected systems make it hard to track energy consumption effectively. This lack of integration hampers efforts to reduce operational costs and



environmental impact, posing an obstacle to businesses with sustainability goals.

Our latest technology feature explores how integrated security solutions can address these challenges. By unifying access control, video surveillance, fire safety, and building management on one platform, businesses can streamline operations, improve security, and enhance overall efficiency. Gallagher Security offers a seamless approach to managing modern buildings, enabling more effective building management and stronger, cohesive security.

This technology feature covers:

- What integrated security is, how businesses can benefit from it, and how it addresses core challenges.
- How Gallagher's platform integration capabilities tackle key issues, along with its standout features.
- Real-world use cases showing how integrated security solutions can simplify operations, improve security, and reduce costs across different industries.
- Key insights from the Gallagher Security Industry Trends Report 2024.



Download your free copy by scanning the QR code.



Micron Technology partnered with asmag.com to conduct a reader survey and industry discussion on current market trends for data retention, endurance requirements, and edge storage purchasing behavior.

• BY Emily Lin and William Pao

he convergence of 5G, AI, and IoT at the network's edge is creating a surge of critical data that is rapidly pushing video security applications towards the cloud, with edge storage playing a vital role in handling growing data demands and requirements. By integrating edge storage within this cloud-based architecture, businesses can create a future-proof VSaaS (Video Security as a Service) solution that prioritizes security, efficient deployment and management.

Benefits of VSaaS

Cloud-based video security or VSaaS are seeing increased adoption. According to MarketsandMarkets, a compound annual growth rate of 16.1 percent is projected for VSaaS from now till 2029. This trend is further supported by our recent industry survey "Edge Storage in Cloud-Based Video Security Applications," conducted by asmag.com in collaboration with Micron Technology. The survey showed that 62 percent of the respondents are already offering cloud-based solutions, the number of which is expected to increase to 80 percent within a year.

The growing popularity of VSaaS can be attributed to several key benefits, from a business model and technology perspective. These include:

Reduced upfront equipment costs: Cloud-based systems eliminate the need for expensive on-site servers and storage hardware. VSaaS operates under an OpEx model which shifts the cost from a capital expenditure (CapEx) to a potentially deductible operating expense (OpEx).

High scalability: VSaaS solutions can be easily adapted to changing security needs

by adding or removing cameras as required.

Remote viewing and management: Users can access and manage their security system from anywhere with an internet connection, offering greater flexibility and control.

Enhanced Security with AI: Integration with advanced analytics and AI at the edge enables real-time threat detection, anomaly recognition, and proactive security measures.

VSaaS offers a compelling value proposition across diverse sectors. For businesses managing security across multiple locations, VSaaS offers centralized management and reduces the need for on-site servers. This also holds true for organizations with limited resources where VSaaS provides a cost-effective and easy-to-maintain solution.

Retail chain stores, with typically small



Hot Topic

camera deployments per location, are a prime example of how cloud architecture can benefit businesses. Centralized management in the cloud eliminates the need for separate servers at each store, streamlining store security and operations.

Similarly, schools and universities, often lacking the resources to maintain on-site servers, can benefit from a cloud-based security solution. This central management system ensures automatic updates for all locations, with new features and analytics uploaded centrally, ensuring implementation across all locations without any hassle for the end user.

High-capacity, long-term storage: A growing trend in VSaaS

There is a growing demand for advanced storage solutions as user requirements continue to evolve. This is driven by several factors:

Increased video data: Higher-resolution cameras generate significantly more video data. A 4K camera at 15 frames per second (fps) produces four times the data of a 1080p camera at 15 fps. This exponential growth in data volume necessitates storage solutions that can scale efficiently to accommodate the demands of high-resolution video security systems.

Longer retention requirements: Compliance with regulations often dictates retention periods. For instance, Singapore mandates keeping CCTV footage for at least 30 days. Taiwan requires childcare centers to retain indoor footage for the same duration. Our recent market survey on edge storage in cloud video security found that nearly half of respondents (45%) have retention requirements of 60 days to 180 days or higher.

However, due to bandwidth costs and network reliability, storing everything on the cloud can be both expensive and not the most reliable. To address these challenges, cloud video security is witnessing a shift towards advanced edge storage.

Edge storage enables recorded data to be retained locally, uploading only critical data, alerts and incidents flagged as important to the cloud. Traditionally on-site network video recorders (NVRs) handled local storage. However, in cloud-based video security systems, advanced edge storage solutions like microSD cards is gaining popularity.

Leveraging edge storage for enhanced VSaaS performance

MicroSD cards allow for extended in-camera storage of high-resolution video, enabling reduced reliance on cloud storage and lower bandwidth consumption. To meet the demanding requirements of VSaaS, manufacturers offer industrial-grade versions of microSD cards specifically designed for the demanding requirements of VSaaS deployments. The options feature high Terabytes Written (TBW) ratings, ensuring durability for continuous recording, and high Mean Time Between Failures (MTBF) ratings, minimizing the risk of system failure.

Consumer-grade edge storage isn't ideal for this workload as it might not be built for such intensive storage workload, leading to reliability issues and frequent replacements. Industrial-grade cards enable concurrent high-resolution (4K) video recording and capture of multiple AI events. This combination of high capacity, durability, and performance makes these solutions a compelling option for cloud video security deployments.

Maximizing VSaaS performance with pre-validated storage solutions

Original equipment manufacturers (OEMs) now often bundle edge storage solutions with IP cameras, presenting several advantages for VSaaS adoption. Pre-validated compatibility between these components ensures smooth integration within the VSaaS ecosystem. This streamlined integration can also potentially benefit VSaaS providers by simplifying system management.

Memory cards that are validated for specific camera models or designated as industrial-grade (designed specifically for the demanding write cycles of video security applications and rigorously tested by manufacturers) also provide performance guarantees. These guarantees help ensure the reliability and stability of edge storage within VSaaS solutions.

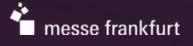
Optimizing VSaaS with edge storage

The future of video security lies in the combination of VSaaS and advanced edge storage. VSaaS offers a compelling value proposition with affordability, scalability, and remote management capabilities. Edge storage complements VSaaS by overcoming bandwidth limitations and ensuring critical video data is secure.

Industrial-grade storage solutions designed for VSaaS deployments guarantee durability, performance, and reliability. Additionally, pre-validated bundled solutions from OEMs simplify system integration and management. This synergy between VSaaS and edge storage offers a future-proof approach to video security, ideal for businesses of all sizes.



Scan the QR code to access full survey results - is cloud-based video security on the rise? And how SSDs, M.2 is seeing a rise in NVR storage for cloud video security.



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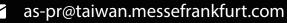
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