

Hanwha Techwin's Top 5

Video Surveillance Trends for 2022

- ◇ **Hanwha Techwin** announces 'Top 5 Video Surveillance Trends for 2022'
- ◇ Focusing on cutting-edge technologies from AI, edge-computing, to cloud

The security and surveillance industries can't start looking ahead to 2022 without first acknowledging the significance of 2021: a year that changed every aspect of our daily lives, including how we socialize, work, communicate and collaborate. The world emerged from an unprecedented global pandemic, with companies in every industry re-evaluating every aspect of their business, from how they interact with their customers to how they manage their workforces to how they go to market.

This new business landscape has also created new types of security and surveillance challenges. Employees, customers and partners are working increasingly in remote locations, sharing and collaborating through disparate online networks and leaving data vulnerable to intrusions. Sites are being monitored remotely, and new public health and safety guidelines are governing how business operate.

Hanwha Techwin has responded to these challenges with new products and solutions incorporating continually emerging technologies from the cloud and automation to Artificial Intelligence/deep learning and an array of connected services and processes. Here's a preview of how these trends will continue in 2022:

1. AI edge computing/analytics :
The proliferation of data and analytics for driving security business decisions



Surveillance and security solutions are increasingly incorporating on-board analytics delivering data that can drive intelligent protecting and monitoring. The role of on-board analytics will continue to expand significantly in 2022 and beyond, as customers combine edge computing and Artificial Intelligence (AI) to achieve enhanced monitoring and search efficiency.

Industry reports predict [the total global edge computing infrastructure will be worth more than \\$800 billion by 2028](#). The use of Edge AI, especially with analytics based on deep learning algorithms, can be a key element in a range of “smart surveillance” applications. These include object detection and classification, and collection of attributes in the form of metadata – all while reducing latency and system bandwidth burdens and enabling real-time data gathering and situational monitoring.

These benefits of edge computing can only be achieved by having a core competency in SoC. Codecs embedded in SoC play a key role in improving image quality while the NPU engine in the SoC with AI algorithm enables AI analytics on the edge. And due to limited resource availability on the edge, the importance of SOTA (State-of-the-art) AI algorithms is on the rise. Maximizing the resource efficiency has always been a top challenge for the edge computing, making the optimization of the AI algorithms inevitable. To cope with the challenge, new ways of machine learnings—such as Transfer Learning—are presented to replace the current leading algorithms. Getting ahead of the trend and internalizing these competencies are the keys to gain a firm ground for the unrivaled edge computing.

AI and edge computing will continue to improve the efficiency and effectiveness of network video surveillance systems, applying analytics (object, loitering, virtual line and area crossing detection to name a few) to monitor every type of area or situation. With this pan-vertical AI and edge computing enabled by cameras, users can conduct “pre-emptive detection” and rely less on reactive monitoring, increasing safety and efficiency.

The Hanwha Techwin’s solution:

Wisenet P and X series AI cameras, employing AI and deep learning technology to detect only user-defined data for effective forensic searches and enhanced operational efficiency. AI and deep learning algorithms help disregard movements of unwanted objects such as shadows, animals, or waving trees, greatly reducing false alarms.

Hanwha Techwin continuously invests on the AI SoC development to strengthen its AI edge computing capabilities.

2. Vision-based surveillance system integrated with AI technology



Network video surveillance systems are advancing from simple monitoring devices to comprehensive solutions that can be applied in every vertical industry and market sector. The driving force is AI technology integrated with systems at every level, a trend that is expected to see unlimited growth.



Industry analysts estimate [the global AI-based surveillance and security market will reach 4.46 billion \(USD\) in 2023](#), with nearly half of all the countries currently deploying advanced AI vision solutions using AI cameras as a vision sensor.

The data generated by AI vision solutions using AI cameras as a vision sensor creates meaningful business intelligence to help organizations gain a better understanding of their customers and their operations. Thermal imaging and body temperature detection cameras at public space entrances and lobby areas use edge-based AI algorithm to bypass non-human heat sources and reduce the frequency of false alarms. Cloud-based solutions use people-counting algorithms to help store owners evaluate sales or floor design strategies, or heat-mapping to measure and avoid long checkout lines to increase customer satisfaction. Similar applications and benefits can apply to traffic management or smart parking systems, logistics and distribution, or healthcare for critical area monitoring.

Businesses can automate their security tactics, with the proper response already planned and ready to deploy.

The **Hanwha Techwin**'s solution:

Enabled by strong edge-based AI video analytics, **Hanwha Techwin**'s newly released AI solutions are tackling a number of challenges throughout several verticals. COVID-19 solutions, smart traffic management solutions, and retail solution all use edge-based AI video analytics for heightened accuracy.

Hanwha Techwin will continue its efforts to fulfill customers' needs in a range of verticals by expanding projects providing customized AI solutions to customers.

3. The “As a Service” business model



Surveillance as a Service, Cloud as a Service, Access Control as a Service – these are all terms being heard more commonly across the security and surveillance industries. But what do they really mean and what are the benefits of an “as a service” business model?

With the evolution and maturation of cloud-based services, video surveillance manufacturers can now transform into “Solution as a Service” providers. Video surveillance companies can provide solutions to their customers through cloud-based platforms, and then extend this model to every area of surveillance.

[The global market for public cloud application services is forecast as a multi-billion-dollar industry in 2022.](#) Companies can realize many benefits by packaging applications, infrastructure and business processes into a combined “as a service” (aaS) offering. They can react quickly to rapidly changing market conditions, go to market faster with new products and services and maximize the benefits of advanced analytics to enhance operations through meaningful insights – all combining to create a unique competitive advantage.

Using aaS models, organizations can tailor solutions more closely to their needs, instead of relying on off-the-shelf offerings. An aaS approach can deliver scalability and cost-effectiveness, reducing

the capital expenditure companies must commit to and helping them move to more of an operating expenditure framework, with services often able to be provided on a subscription basis.

Applying aaS principles to video Surveillance – resulting in VSaaS – can enable cloud-based recording. This eliminates the need for on-site servers and allows organizations to rapidly deploy systems without the need for complex and time-consuming network configurations. Cameras and all devices can be centrally monitored and many network and system processes can be automated.

The **Hanwha Techwin**'s solution:

Hanwha Techwin is also strengthening its 'As a Service' model by investing in cloud-based platforms and services. Offering cloud-based storage, VMS analytics, device management, designing/installation tool and more, **Hanwha Techwin** again will take a leadership position in cloud-based 'Solution as A Service' offerings.

With the success of recently released Wisenet SKY in North America, the company is planning on releasing Wisenet Toolbox Cloud allowing customers, and especially system integrators/designers/installers, to design video surveillance systems with a Wisenet Portal allowing customers to manage devices on a single platform.

4. Responsible and ethical uses of surveillance technology

As any technology improves, so do the capabilities of cyber-criminals. Security concerns will continue to increase as organizations adopt new cloud models while seeking to maintain customer and employee trust. The increasing number of remote workers also increases the cloud's appeal for managing costs while giving employees the flexibility to work remotely but still securely access the data, goods or services they need to do their jobs.



Using technologies like AI-based video cameras to enhance commercial security and surveillance has a tremendous range of benefits. But it also raises just as many concerns over privacy violations and cyber-attacks. For example, utilizing the biometric data for the access control is often criticized for posing a grave threat to the privacy. International organizations such as the EU's General Data Protection Regulation (GDPR), the National Defence Authorization Act (NDAA) and other similar bodies all have specific and stringent requirements for data protection and privacy, and manufacturers vying for certain types of contracts, especially in the government sector or related to international trade, will need to enforce compliance across their operations and product lines if they expect to win new business opportunities.

The Hanwha Techwin's solution:

Hanwha Techwin is preparing the privacy masking technology which utilizes AI based object detection technology. It will allow live view masking of meaningful objects such as human faces and license plates, eliminating concerns over privacy protection.

Hanwha Techwin cybersecurity policies start from the beginning of product designing and continues in each step of the development and manufacturing process. "Secure by default" –following the UK's Cyber Security Centre principles–means a camera's out-of-the-box settings are already the recommended ones to use. The company's unique cybersecurity policy satisfies stringent UL Cyber Assurance Program (CAP) standards and its recently released AI camera lineups including Wisenet P series AI cameras and The New X series AI cameras are equipped with the TPM (Trust Platform Module) 2.0 validated by FIPS (The United States' Federal Information Process Standards) 140-2.

Hanwha Techwin is doing its best to take the full responsibility of its technology uses by complying with world renowned organizations' standards.

5. Integration of technology



Network and IoT are already widely embraced but they will continue to disrupt the security camera market, enabling new advances in HD video streaming, even on mobile devices. These technologies will expand the potential applications for audio and video analytics and Artificial Intelligence in an increasingly connected world. On a broader level, there's a massive upsurge in widespread digital transformation, with the key technologies driving this change including IoT and network as well as cloud computing, intelligent data and Artificial Intelligence.

The Internet of Things is expected to be positively impacted by advanced network, especially in terms of bandwidth and latency. Adding advanced network to surveillance cameras supports remote real-time video surveillance, the expanded use of mobile applications and legacy network management.

Artificial Intelligence Internet of Things (AIoT) can enable an almost unlimited array of potential opportunities, such as open and integrated system/platforms to expanded device connectivity.

The Hanwha Techwin's solution:

Hanwha Techwin has its own open-platform framework allowing users to add AI apps securely and easily for increased camera

usability. It unleashes the potential of cameras to work as a vision sensor in AI-based solutions combined with AIoT technology. To further bolster its global presence as a leading AIoT solutions provider, **Hanwha Techwin** plans to introduce an AI box to give customers a broader range of hardware options. With the AI box, customers will be able to turn any network camera into an AI camera, allowing users to run applications that would fulfill their specialized needs. The company also plans to strengthen ties with various VMS partners through exchange programs and introduce products with broader integration options enabled by plug-ins.

###