SOLUTION BRIEF

Intel® Vision Products
Intel® Distribution of OpenVINO™ toolkit

Intel® Vision Products are Propelling the Next Generation of AI Technology for Security and Surveillance

Intel's robust portfolio of vision products helps Honeywell accelerate video processing time and increase the number of cameras streaming in real-time through a single device

"The Internet of Things is creating huge advancements in the way we use video to ensure safe and secure buildings. With new emerging technology like analytics, facial recognition and deep learning, Honeywell and Intel are connecting buildings like never before. Intel is an important partner in establishing the vision of smarter video solutions for the industry, and we look forward to continued collaboration that benefits customers."

— Jeremy Kimber,
Marketing Director, Video Solutions, Honeywell

The strain of processing high-definition vision data is driving demand for a centralized, flexible, and intuitive vision solution

The security and surveillance industry has changed over the last several years thanks to advances in camera technology, resulting in higher resolution images. As the resolution increases, however, the devices that store, filter, process, and analyze vision workloads are struggling to keep up. In order to effectively leverage vision for security and surveillance applications, organizations need to be able to process the increased vision data that accompanies high-quality images.

Furthermore, the growth of IP networks and the demand for high-definition video offered by IP cameras has resulted in an increased need for the convergence of building security systems and IT systems. To address these challenges and fulfill these demands, organizations require a solution that:

- Enhances site security and operator productivity with an integrated, centralized, customizable security system
- Identifies potential security risks accurately and quickly by mitigating false positives and improving reaction times
- Meets privacy regulatory compliance through identity anonymization
- Enables high performance, real-time image processing, inference, and analysis

Intel can deliver one of the most comprehensive arrays of intelligent vision capabilities to the wider market

The Intel® Vision Products portfolio is comprised of silicon, software tools, deep learning frameworks, and libraries that are uniquely positioned for the next generation of AI. Intel® Vision Products are helping put your data to work, from the edge to the cloud, so you can act in real time, make decisions faster, and implement new operational strategies to drive immediate results.

At the hardware level, Intel boasts an extensive selection of acceleration silicon for vision workloads. Intel® CPUs, CPUs with integrated graphics, and Intel® Vision Accelerator Design Products based on Intel® Movidius™ VPUs and Intel® FPGAs help deliver highly accurate vision analytics performance and compute efficiency.

Intel also offers an array of software tools, including the Intel® Distribution of OpenVINO™ toolkit, for accelerating the development and integration of intelligent vision solutions and capabilities at scale. This end-to-end suite helps integrate vision capabilities across your entire end-to-end infrastructure.

Honeywell

Honeywell is using their strong expertise in software and manufacturing to build a smarter, safer, and more sustainable world

Honeywell, a fortune 100 company, invents and manufactures technologies to address some of the world's most critical challenges around energy, safety, security, productivity, and global urbanization. At the center of their innovation is a relentless drive for continuous improvement with the vision for a secure, comfortable, cleaner, and more efficient future.

At the forefront of Honeywell's software innovation is **Honeywell Connected Enterprise**—a centralized internal organization dedicated to software development. With about 60% of Honeywell's growth over the next five years expected to be connected to software, Honeywell is investing significant resources into this sector.[1]

One outcome of this investment is Honeywell's suite of video analytics software, which enables enhanced security and surveillance solutions for indoor and outdoor operation. Honeywell's analytics solutions deliver the required functionality to solve a magnitude of customer problems, from identifying security threats quicker to lowering false alarms.

With a strong industrial background, Honeywell can effortlessly blend physical products with software to make their solutions more connected, efficient, and productive.

The Intel® Distribution of OpenVINO™ toolkit helps Honeywell reduce costs and save time

As the centerpiece of computer vision solutions, the Intel® Distribution of OpenVINO™ (Open Visual Inference and Neural Network Optimization) toolkit is a free, downloadable toolkit within the Intel® Vision Products portfolio that accelerates the development of high-performance computer vision and deep learning inference into vision applications. Optimized for multiple Intel® Architectures, the toolkit works with CPUs, CPUs with integrated graphics, Intel® FPGAs, and Intel® Movidius™ VPUs. By leveraging the toolkit, users can accelerate computer vision performance, shorten vision solution development, and streamline deep learning inference and deployment.

Honeywell is using Intel's CPUs with integrated graphics to supply additional processing power to its hardware, thus accelerating video streaming and increasing density so more videos can stream simultaneously through a single device—all of this made possible by the Intel® Distribution of OpenVINO™ toolkit's media encode/decode functions.

Intel® Vision Accelerator Design Products provide high-performance, deep learning inference acceleration at the edge, helping Honeywell quickly analyze the massive amounts of data associated with each video stream. Honeywell can then leverage the Intel® Distribution of OpenVINO™ toolkit to standardize deep learning models across enterprise and small-medium business offerings. Deep learning enhances Honeywell's video analytics offerings by improving detection accuracy.

The Intel® Distribution of OpenVINO™ toolkit is helping Honeywell deliver faster processing power and more accurate analytics in vision applications

MAXPRO* is not a single product, but a platform to host a portfolio of IP video management hardware and software.

MAXPRO* VMS is the video management software system for the MAXPRO* NVR. It is a powerful, high definition IP recording and security monitoring system that makes it possible to manage video across multiple platforms from a central location—acting as the integration gateway to video, access control, and third-party systems.

MAXPRO* NVR is the hardware component, comprised of Intel® processors like the Intel® Core™ i7 processor, that processes all the video footage and data. There are several turnkey solutions customers can select from, the most common of which is the NVR Standard Edition—an open, flexible, and scalable IP video surveillance system that uses Honeywell's cameras to provide a high-definition IP recording system and viewing client. The solution supports simultaneous recording, live monitoring, and search and system management for up to 128 IP cameras. Data enters the NVR, either through a server or directly, and the NVR makes that data available for the software in a central monitoring environment.

Xtralis IntrusionTrace* is an high-performance, intelligent video analytics tool for real-time intrusion detection to identify when a person enters a specified area. Using virtual boundaries created by users to define the space, the algorithm tracks persons entering and leaving that space with lines and patterns to show directionality. This tool is especially valuable if users want to be notified when someone enters the property, or if that person is approaching a secured area.

Face Recognition is part of Honeywell's analytics toolbox, providing another layer of detail based on defined rules around facial recognition. For instance, the software can learn faces of known entities in an organization into the system so it will distinguish between faces it recognizes and faces it doesn't. Then, the camera can zoom in on the people it doesn't recognize and virtually ignore the ones it does. Facial recognition analytics is suited for suspect search by helping find where a person has been on the premise just by uploading a facial image of the person of interest. However, it is important to note that the software is also capable of taking faces it doesn't recognize and blurring them out in order to comply with GDPR requirements.

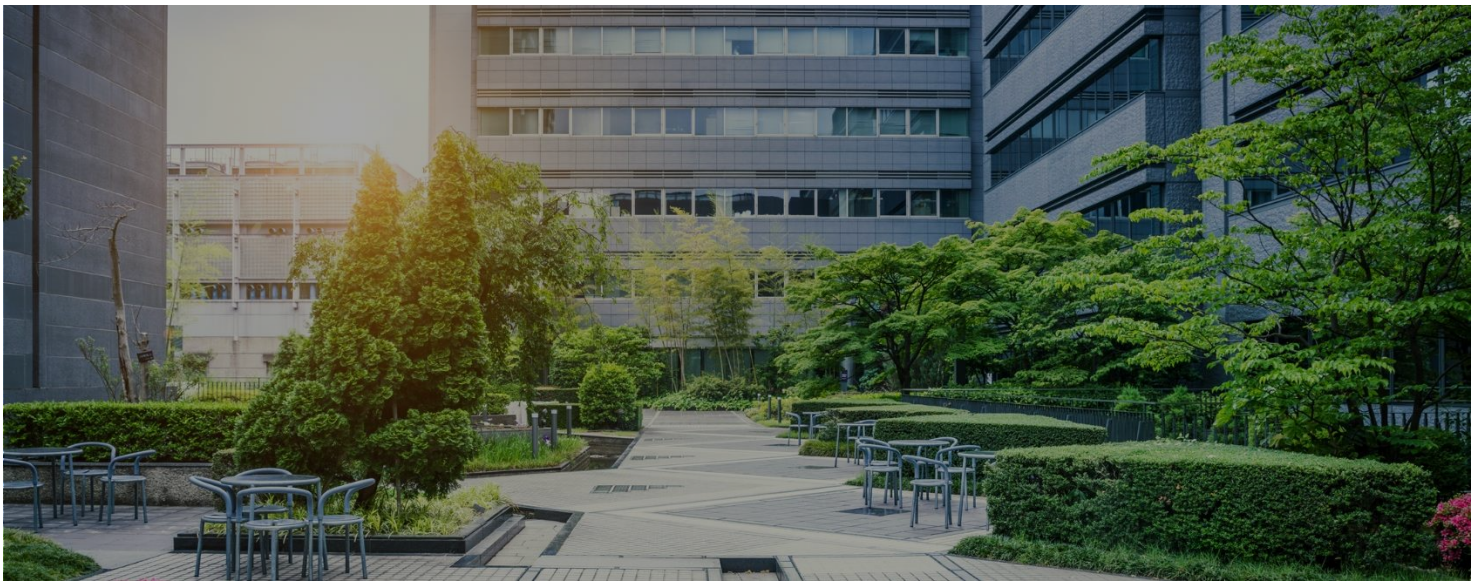
Xtralis LoiterTrace* is an image analysis tool that uses advanced algorithms to detect, track, and identify people that are loitering or remaining in a designated area too long and looking suspicious. The software creates a pattern as the person moves around the space to follow where they have gone and indicate the direction they are heading.

Honeywell is combining Intel's vision portfolio with their cutting-edge technology to revolutionize the video security and surveillance market

Honeywell's vision solutions serve a wide range of industries and applications from healthcare to finance. The three primary focus areas for IntrusionTrace*, LoiterTrace*, Face Recognition, and MAXPRO* are enterprise campus environments, pharmaceutical companies, and banking and finance institutions.

Enterprise Campus Environments

Increasing security concerns and continual investments in infrastructure are driving the need for advanced security solutions on university and corporate campuses. Honeywell's vision solutions, based on the Intel® Distribution of OpenVINO™ toolkit, help enterprise campus environments monitor activities on the premise and protect against intrusion, theft, or vandalism.



Pharmaceutical Companies

Pharmaceutical companies deal with a lot of sensitive information and biohazard materials related to drug development, both of which pose serious threats to the public if they were to fall into the wrong hands. Honeywell's vision solutions, based on the Intel® Distribution of OpenVINO™ toolkit, help pharmaceutical companies control access to physical lab spaces and minimize potential health risks and illegal activity.

Banking and Financial Institutions

It's no secret that vision surveillance has been an important component of bank security for many years. But as technology advances, criminals are finding new ways to evade security measures. Honeywell's vision solutions, based on the Intel® Distribution of OpenVINO™ toolkit, help banking and financial institutions centralize their security monitoring system so guards can patrol several locations at once and respond to alerts when there is suspicious activity.

Conclusion

Honeywell's customizable solutions, based on Intel® Vision Products hardware and software, including the Intel® Distribution of OpenVINO™ toolkit, deliver advanced analytics and deep learning inference for monitoring video footage and quickly detecting anomalies. As a result, end users can reduce false alarms and meet compliance requirements, which can translate to cost reductions and time savings, ultimately allowing these companies to make decisions faster and implement new operational strategies to drive meaningful and impactful business results.

Learn More

For more information on the relevant Intel and Honeywell products, visit:

- Intel® Vision Products Homepage
- Honeywell Video Components Homepage
- Honeywell Integrated Security Homepage

To learn about the Intel® Distribution of OpenVINO™ toolkit, visit:

- Intel® Distribution of OpenVINO™ Toolkit Homepage (an open source version is also available)
- Intel® Distribution of OpenVINO™ Toolkit Customer Testimonials

1. Honeywell website
2. Marketsandmarkets, Perimeter Intrusion Detection Systems Market, June 2018
3. MarketsandMarkets, Video Surveillance Market, May 2018
4. Research and Markets, Video Analytics – Global Market Outlook, October 2018