

Solution Brief

Optimal Video Processing

Artificial Intelligence



Optimizing Safety Management and Operations Through the Beseye AI Video Analysis Platform Powered by 11th and 12th Gen Intel® Core™ Processors

The Beseye AI Video Analysis Platform, optimized with the Intel® Distribution of OpenVINO™ Toolkit, detects potential threats, filters out false alarms, and provides insights that help decision makers facilitate safety and security for people and personnel



About Beseye

Beseye is a world-class AI developer on a mission to ensure public safety and minimize risk to human life. By providing easy-to-use AI solutions, Beseye aims to help people upgrade their security management in the simplest way possible.

Overcoming the Challenges of Manual Safety and Security Monitoring through a Powerful Computer Vision Solution

Enhancing the safety of security of people and places is often a paramount concern for most enterprises, yet finding an efficient and cost-effective way to achieve this goal can be daunting. Furthermore, it's hard to find a reliable AI solution as they must be downloaded, tested, and hosted on secure servers.

Passive solutions that require constant manual oversight of security feed and video monitors induce fatigue for staff, are typically ineffective, prone to human error, expensive, and labor and resource intensive. Without AI inferencing and behavioral analysis these solutions lack the ability to make the most out of video data, which is why many organizations are turning to computer vision and AI-based solutions. However, the challenges to running and maintaining computer vision solutions remain significant: Implementing high-quality computer vision solutions can lead to cost issues such as stack creep, maintenance, and personnel costs. Additionally, finding the right partner who treats data with care and has a good reputation for security, privacy, and customer support can be difficult.

This is where Beseye's technology provides opportunities for both system integrators (SIs) and end-users in industrial, transportation, education, financial, and retail markets. For integrators it provides a simple, tested, AI and server solution with plug-and-play hardware, ready to go out of the box. For end-users, customers can access an enormous range of insights while managing tasks such as zone control, fence and perimeter intrusion detection, fall detection, crowd dynamics. With this flexibility and ability to help achieve data driven ROIs, Beseye offers both clients and sellers a high-quality platform capable of delivering high-impact computer vision-based security and analytics.

Beseye AI Video Analysis Platform Introduction: An Answer to Streamlined Computer Vision Live, at The Edge

Integrating and learning new technology can be an overwhelming experience. That’s why Beseye was designed to be an intuitive, easy-to-use, plug-and-play computer vision security solution.

First, Beseye offers users and integrators system agnostic hardware and software packages. Furthermore, it is compatible with 720p and above, or ONVIF certified cameras, meaning Beseye can easily integrate with a majority of existing security platforms.¹ This provides both end-users and integrators a computer vision toolkit that can be customized to meet a wide range of security analysis for transportation, smart factory, institutional, and other large, highly trafficked environments.

Second, Beseye’s proprietary Skeleton-Print technology captures nearly 4,000 feature points for behavioral and anomaly analysis.¹ This can help operations and security personnel detect threats or safety concerns by identifying complex behaviors and communicating real-time events through instant notifications and reports that can be used to support both rapid response and future planning.

Third, it can be run at the edge or integrated with any Intel hardware, lowering the cost of stack operations.


As a versatile behavior, anomaly, and event analysis solution, the Beseye AI Video Analysis Platform helps SIs and end-users solve complex challenges and operations in a number of unique ways.



Features of The Beseye AI Video Analysis Platform

Integrating and learning new technology can be an overwhelming experience. That’s why Beseye was designed to be an intuitive, easy-to-use, plug-and-play computer vision security solution. They offer solutions across a wide variety of industries including industrial facilities, smart factories, transportation, and healthcare facilities with capabilities that include:

 Fence Intrusion Detection

 Restricted Area Control

 Critical Event Response

 Restricted Area Detection

 Perimeter Monitoring

 Pedestrian Traffic Management

 Crowd Management

 Standard Operating Procedures Analysis

 Fall Detection

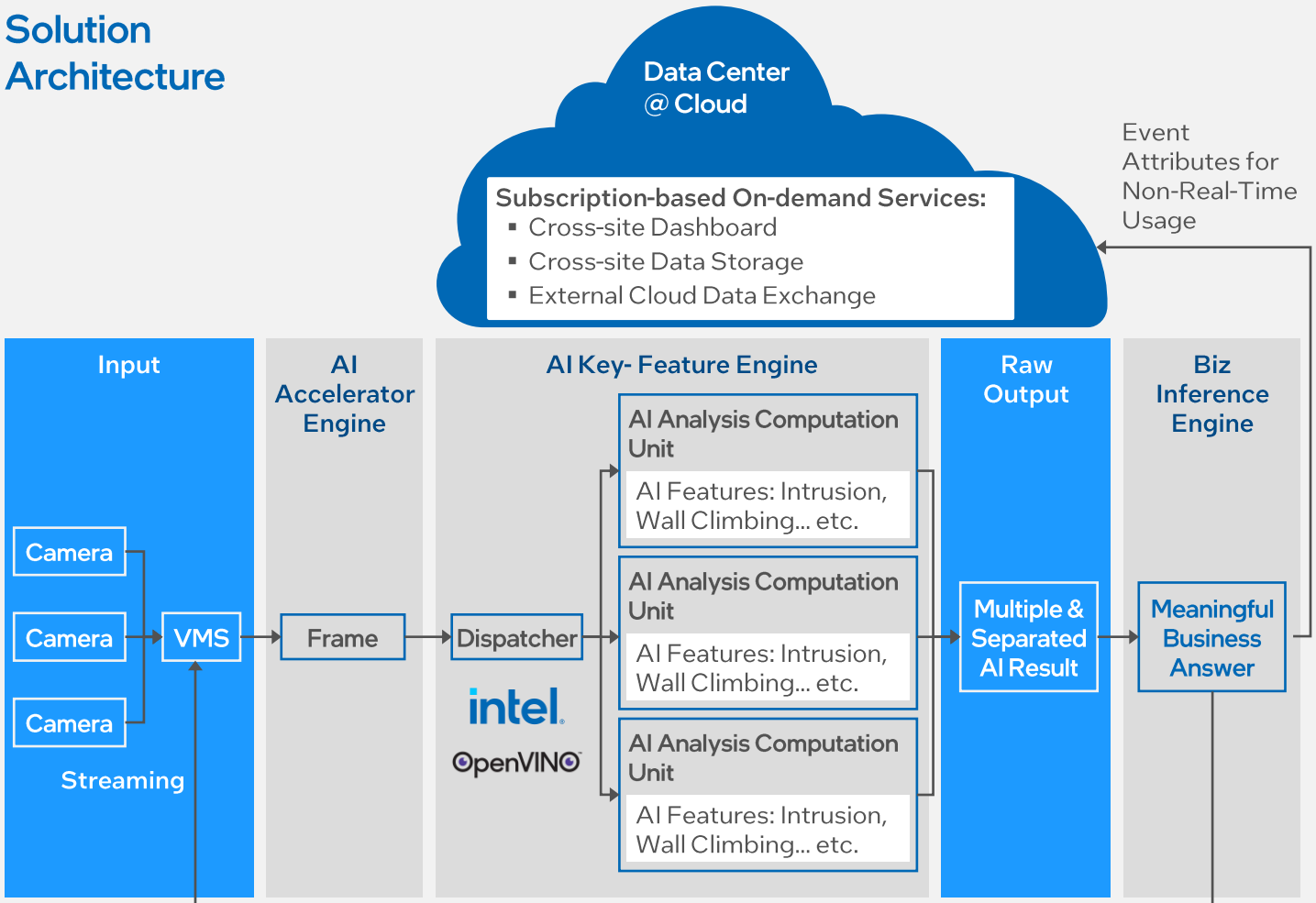
 Traffic Flow Control

 Facility Security

How It Works

Beseye was designed to be easy to install and intuitive to use. Overall, the way it works is simple: existing cameras, or optimized Beseye cameras, are connected to Beseye's AI management suite, along with the cloud server, analytics, and insights platforms. Though Beseye provides a secure cloud, clients can also host data on a preferred local server, which can add additional layers of security for sensitive information.

Solution Architecture



Data Collection and Protection

The world is growing ever more complex, and high value locations that rely on the successful protection of their property, and assets, need to know the data they capture is as secure as their perimeter.

Beseye follows three key principles when it comes to data security:



Secure Transmission



Secure Storage



Secure Access

With these principles in mind, the Beseye AI Video Analysis Platform has been designed to handle data with a high-level of confidentiality and sensitivity. When it captures human behavior, it does so by analyzing abstracted human body features, in order to prevent the identification of individuals.

The Beseye solution can be configured to store and analyze passthrough data, if required by the customer. However, Beseye's servers also utilize AES-256 encryption to prevent unauthorized access and cannot be accessed without obtaining user permission.

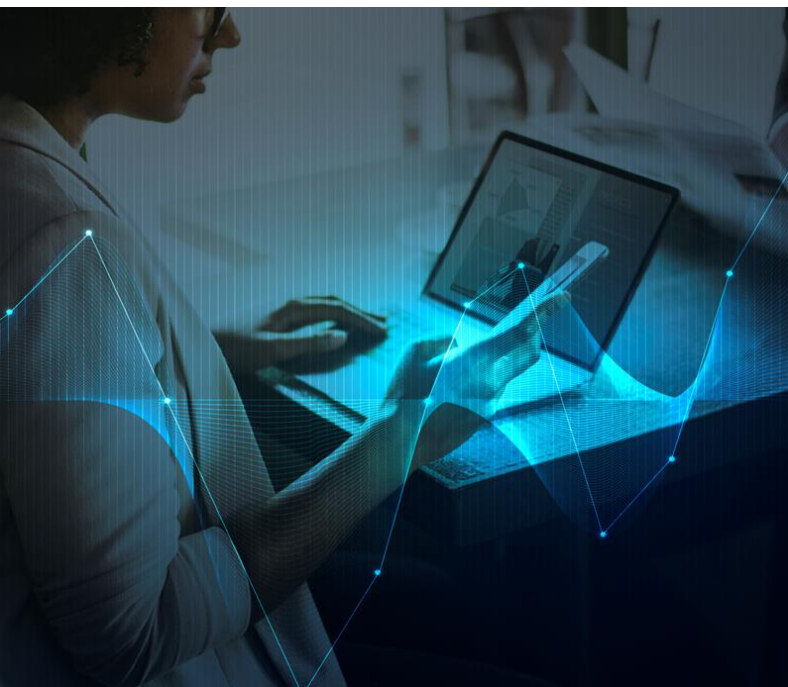
The Beseye AI Video Analysis Platform Provides Proprietary, Impactful Technology That Sets Them apart from Their Competition

Beseye offers a highly flexible solution that can meet the needs of any customer regardless of size, number of locations, and current infrastructure. Though capable of accomplishing standard routine security analysis, here are some ways Beseye stands out from the competition:

Unlike traditional security systems that are passive and require costly constant monitoring, Beseye's Skeleton-Print technology captures 4,000 key points in order to accurately read human posture.¹ It then cross-references this information with behavioral and event data, minimizing the need for human operators to constantly monitor the system, and opening opportunities for security professionals to spend more time on high-value priorities.

Other systems are prone to false alarms; however, Beseye is pre-trained to help reduce false alarms sent to operators and enable them to focus on real risks. Additionally, Beseye utilizes tools and models that help security professionals reduce the time and resources required to analyze footage. These range from public safety and zone analysis, and other features that can be utilized to optimize environments across a wide range of use cases.

For example, Beseye cameras are able to operate at low power while analyzing high-quality video data up to 30 meters away from the camera.¹ The Beseye solution also benefits from being flexible in the way it can be deployed.



Only Beseye Provides

1 High analytical accuracy

AI that can read human posture: Beseye Skeleton-print technology identifies 4,000 feature points to detect human presence and analyze human posture from a distance and at any angle to determine security concerns and hazardous behavior.¹ It is 30% more accurate than other Video Analytics on the market.²

2 Low import costs

Exclusive AI on CPU technology: Beseye leverages Intel technology to enable AI to perform computations without relying on expensive GPUs, resulting in significant cost savings for clients, and to increase AI computing performance by up to 299% while maintaining the same accuracy.² In the past, the same AI computing resources could only support 4 cameras, while Beseye can support up to 24 cameras.²

3 Complete turn-key solution

Can be easily deployed even without IT background: Supports over 90% of security cameras on the market, reducing the need to replace existing security infrastructure. Connection to a world-class VMS (Video Monitoring System) can be completed in 2 weeks to 1 month with ready-to-use AI and easy integration.¹

4 High privacy automated security detection

Avoiding privacy disputes for enterprise: Immediately notify via VMS, app, or email if a human presence is detected in restricted areas or if there has been a fall, accident, or other important incident. The solution adheres to CIS (Center for Internet Security) guidelines for data security and high protection measures in analysis functions and data transmission.

The Beseye AI Video Analysis Platform Customer and System Integrator Benefits: What are some of the key ways systems integrators and end-users benefit from Beseye?

By partnering with Intel, Beseye is able to provide both Systems Integrators and End-Users a readily available AI, server solution, and services that can be easily deployed with plug-and-play hardware. This makes Beseye an ideal situational monitoring solution for institutions such as transportation hubs, industrial facilities, campuses, and other large operations.

System Integrator



Improve profitability by eliminating the need for manual monitoring or additional servicing and maintenance by providing a durable, reliable toolkit capable of delivering high-impact security and analytics



Increase cross-vertical marketability by providing an affordable, low maintenance, high-tech, mass scalable security solution to a diverse range of customers and stakeholders



Stand out from competitors with a highly specialized offering capable of delivering high-value insights within a secure, energy optimized stack



Build trust with your customers by offering easy to install plug-and-play hardware along with a tested AI and server solution built on reliable, high-quality Intel® compute

End-Users



Improve security staff productivity and efficiency by automating the process of monitoring security feeds and making rounds, freeing up time for security to focus on more value-added tasks



Increase responsiveness through real-time notifications and pro-active action planning with insights that enable staff to respond more quickly and effectively



Enhance safety for people and places by, reducing false alarms and providing real-time communications



Provide insights and analytics to help identify critical areas for planning or mitigation, enabling organizations to take steps to prevent incidents before they occur



The Intel Technology Story

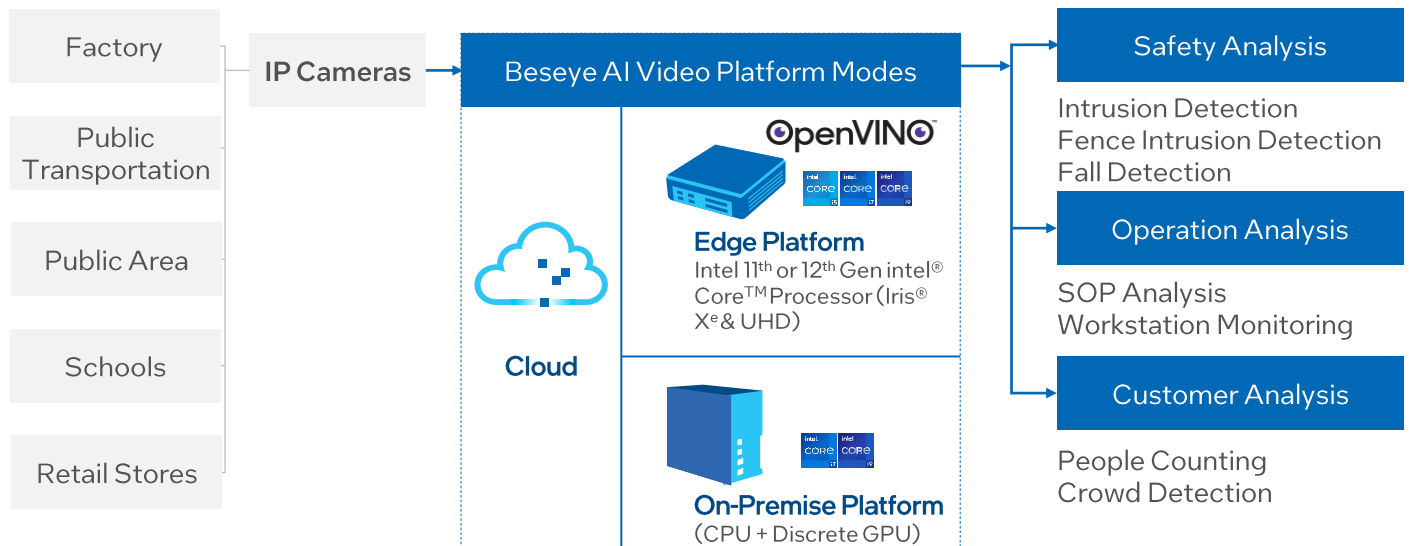
Running computer vision is traditionally an expensive, GPU heavy process. Luckily, Intel provides the architecture necessary to help Beseye provide a worldclass computer vision solution.

At the edge, Beseye’s gateway edge computer powered by Intel® Iris® Xe Graphics and Intel® Xeon® processors, helps capture, label, and process endless streams of computer vision data. This information is then ported to Beseye enabled CPUs with discrete GPUs; computer-vision analysis engines charged with 11th and 12th Gen Intel® Core™ processors, and optimized for performance by Beseye, where the AI Video Analysis platform is able to detect the most nuanced actions and events.

However, it is the Intel® Distribution of OpenVINO™ Toolkit that has unlocked the true potential of Beseye. Before OpenVINO™, all of Beseye’s AI enabled video servers required discrete GPUs. For example, in order to run analysis for twenty-four cameras, Beseye required an Intel® Core™ i7 processor and a discrete GPU. But now thanks to the Intel® Distribution of OpenVINO™ Toolkit, Beseye can run video analysis for twenty-four cameras on a single Intel® processor with Intel® Iris® Xe Graphics that increases data processing speed and quality while passing on reduced costs to customers.²

As such, the Intel Distribution of OpenVINO™ Toolkit is a crucial tool for developers looking to optimize computer vision applications for deployment on Intel hardware for their businesses. Its support for multiple deep learning frameworks, optimization tools, and pre-trained models truly make it a valuable asset for any computer vision project.

Beseye AI Video Analysis Platform Overview



The Beseye Solution in Action: Helping Improve Security for a State-Owned Natural Gas Company in Taiwan

After Beseye established an international network of successful client engagements, one of the largest energy institutions in Taiwan approached them and expressed interest in their AI Video Analysis Platform.

This institution owns and operates a large volume of major industrial facilities of high national and civic importance. As such, security at this company is highly focused on intrusion, sabotage, and strategic targeting. Unfortunately, some facilities within the corporation have walls or other perimeter barriers that are low or expose the facility to the risk of intrusion and other unauthorized access.

Infrared sensors and AI technologies that had been introduced by the institution in the past suffered from low performing accuracy between 20-30%, which caused major inconveniences and delays to security managers. To overcome these challenges, all old infrared sensors were replaced with Beseye AI Video Analysis Platform.

Summary

Beseye's AI Video Analysis Platform is a powerful tool in the arsenal of modern situational monitoring for industrial, transportation, education, financial, and retail customers. With its high level of data mapping, data training, and verification abilities, it connects organizations that maintain the safety and security of large facilities, to a single, elegant, customizable, and intuitive toolkit for analysis, insights, and actions.

Are you interested in finding out how Beseye can revolutionize your operations? If so, reach out to Beseye today. Beseye is dedicated to ensuring sellers and customers have the support they need to succeed. As such, Beseye works closely with new partners to provide product training, integration, and a regional sales support program for SIs.

To get started with Beseye's next generation security solution, please contact either their business department: partners@beseye.com or the sales department: sales@beseye.com.



Learn More

Intel® Products and Technologies

- [Intel® Core™ Processors Product Page](#)
- [Intel® Iris® Xe Graphics](#)
- [Intel® Distribution of OpenVINO™ Toolkit Product Page](#)
- [Intel® Optimization for PyTorch Introduction](#)

Beseye Products and Technologies

- [Beseye Website](#)
- [Beseye Product Page](#)
- [Beseye AI Video Analysis Platform Demo Video](#)



Sources

1. Beseye Internal Data. Intel does not control or audit third-party data. Please review the content, consult other sources, and independently confirm if the data provided is accurate.
2. Data from internal test results of Beseye. Intel does not control or audit third-party data. Please review the content, consult other sources, and independently confirm if the data provided is accurate.

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