Partner Solution Brief

Industrial IoT
Intel® OpenVINO™ Toolkit for AI
Intel® Edge Insights for Industrial

Insight Enterprise and Intel Enable the Intelligent Edge for Manufacturing

Intel® OpenVINO™ toolkit, Edge Insights for Industrial software, and silicon technologies power Insight Enterprise's customized end-to-end Intelligent Edge solutions

By 2025,

75%

of enterprise-generated data will be created and processed at the edge.[1]

Rise of the Intelligent Edge

Across multiple industries, new distributed computing architectures such as edge computing are enabling dramatic new use cases for businesses, increasing productivity, reducing cost, and eliminating waste. When edge computing is combined with Artificial Intelligence (AI), Machine Learning (ML), and analytics, these technologies come together to create the Intelligent Edge. This architecture enables manufacturers, retail organizations, utilities, and other industrials to perform detailed analyses of system data close to the point at which it is generated. By implementing the Intelligent Edge architecture, these organizations can significantly reduce latency in operations and gather actionable insights from their data, ideal for automating critical tasks or for use cases such as the Internet of Things (IoT). Instead of sending data generated on a factory floor to the cloud or other location for analysis, integrated AI/ML systems perform their analytics on-site and immediately enable new actions to make the business more efficient. The Intelligent Edge also reduces waste and security risks. Together, these benefits enable a far more efficient operation, boosting productivity and overall revenue while reducing costs.

Capturing More Data to Improve Business Outcomes

Today, only about 10% of data is processed and analyzed. Gartner predicts that this figure will reach as much as 75 percent by 2025[1]. This data holds insights that could improve business outcomes. By deploying an Intelligent Edge architecture, businesses are able to not only capture this data but also act on it in time to run AI models and benefit from the insights generated.

The Intelligent Edge can target a variety of use cases from simple data collection and monitoring to predictive maintenance, quality inspection and assurance, and computer vision. Return-on-investment (ROI) will range depending on the use case and the organization's exact implementation needs. Industrial processes, IoT networks, and fabrication models are often unique deployments that require solutions designed specifically for their application. As a result, to get the most out of their potential Intelligent Edge deployments, many organizations need experienced partners with optimized solutions to tackle such a complex task. Insight Enterprises, a global integrator of Insight Intelligent Technology Solutions™, has worked closely with Intel to optimize and accelerate its hardware and software to create custom, fully integrated Intelligent Edge solutions for organizations worldwide.

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Insight Service Portfolio and Technology Offerings

As a thought leader in the Intelligent Edge domain, Insight is uniquely positioned to deliver an end-to-end solution that focuses on the organization's desired business outcomes. Based on decades of successful implementations, Insight is skilled at getting to the heart of unique problems for a specific firm and has the expertise to design and build a secure edge solution that is efficient to operate. Insight also has the scale to drive IoT solutions from ideation to ongoing management with more than 2,500 dedicated digital innovation, sales, services, and solution architects on its staff.

When developing Intelligent Edge solutions, Insight begins by engaging with clients to understand their current challenges and the value of solving those challenges. Once a challenge and an ROI target are identified, the Insight Digital Innovation team designs, builds, and tests the solution in an Agile fashion, providing visibility into the design-and-build process and course correcting as required. Consistent deployment and quality are delivered through DevOps during the build phase.

The output of this build phase of the process is a single, connected platform manufacturers can use to manage all users, devices, data, and alerts. A comprehensive visual dashboard provides real-time information on the health of any operation. Companies are able to use live metrics for quick, consistent decision-making—empowering them to take control of their production.

Insight's design services and connected platform leverage Intel's deep bench of industrial IoT technologies, such as the Intel® OpenVINO™ toolkit for AI, computer vision, and Intel® Edge Insights for Industrial (EII) inferencing software. Edge Insights for Industrial, in particular, is widely utilized as part of Insight's solutions. EII is made up of a battle-tested software stack that enables System Integrators (SIs), Independent Software Vendors (ISVs), and equipment manufacturers (e.g., Industrial PC manufacturers, machine builders, etc.) to more securely ingest, analyze, and store video and time-series data. EII, which is based on an open and flexible microservice architecture, is optimized for Intel-based hardware and silicon solutions. This is important since Insight makes extensive use of Intel software and silicon technologies in its solution offerings.

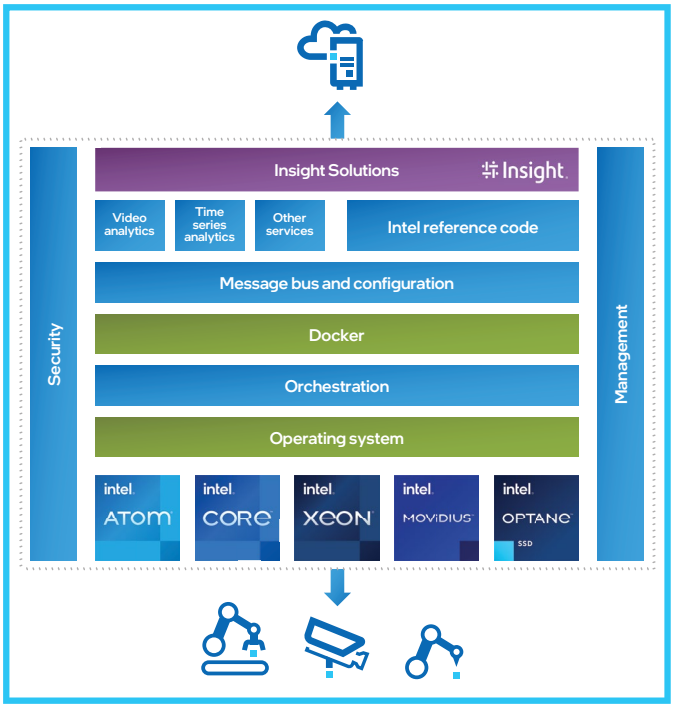

Figure 1. Insight Solutions integration with Intel® Edge Insights for Industrial Architecture

About Insight Enterprises

Insight Enterprises is a global integrator of Insight Intelligent Technology Solutions™. They define, architect, implement and manage intelligent technology solutions that help organizations run smarter. Insight works with clients to maximize IT investments, empower workforces with right-fit tools, and modernize and help secure technology infrastructure.

Insight Service Portfolio

An engagement with Insight begins with its portfolio of end-to-end services. While not every customer will use all of the services, together they represent a complete offering that gives Insight the ability to tackle any contingency.

Digital Innovation – By far the most critical service option, Insight Digital Innovation is dedicated to making the impossible possible. This solution area uses Insight's cutting-edge technology combined with its team's creative thinking and the power of scale to deliver radical business transformation. Insight helps its clients adopt new technology and adapt to new processes from ideation to execution to change management.

Cloud and Data Center Transformation – Insight works to update IT infrastructure to help companies navigate increased demand on networks and cloud infrastructure to meet their need for data performance, security, and resiliency.

Connected Workforce – Flexibility, mobility, and agility are now top priorities for employees and customers alike. Businesses are shifting their focus to end users and endpoints to maintain a competitive edge.

But successfully deploying, adopting, and managing the tools and technology is complex and costly. Insight has the people, processes, and experience to create a streamlined digital workplace, enabling companies to seamlessly connect their people wherever and whenever they work with technology and services that enhance collaboration.

Supply Chain Optimization – By optimizing its supply chain, an organization can reduce the time it takes to run the business and enable transformation for future growth. Insight helps companies simplify processes and maximize resources as they invest in tools that meet their teams' changing needs.

Insight Edge Accelerator

The Insight Edge Accelerator is an excellent foundation for clients to build upon, enabling them to quickly realize the value of an edge-enabled solution. The Edge Accelerator incorporates all the foundational features that a production system requires:

Device Management – This feature allows organizations to manage many devices at scale. It also includes the ability to deploy software workloads to devices as well as monitor the health of the edge device.

Location Management – An intelligent edge solution needs to be scalable across locations. Location Management allows the user to create/edit/delete locations and assign users and devices to those locations.

Alert Management – As the edge device runs the solution, it will come across anomalies and conditions that will generate alerts. The accelerator has alert management built in to acknowledge the alerts coming from multiple locations and devices and provide comments on them.

Security & User Management – The ability to onboard users securely is an important feature that is part of the accelerator. It allows the client to invite users and manage them. The accelerator also includes device onboarding and assignment.

The accelerator allows organizations to focus on the use case and build their own functionality on top of the accelerator's foundational elements. This helps reduce the cost of bringing the solution to production and quickly realize its value.

Intel and Insight Work Together to Enable New Use Cases

The combination of Intel's technologies with Insight's expertise and connected platform enables multiple new use cases that give unprecedented insight into a manufacturer's operations.

A good example would be monitoring product quality on assembly lines, easily one of the most important activities on a manufacturing site. Insight can create a computer vision-based system, leveraging AI to quickly and easily determine if the products produced are up to specifications. Computer vision systems can easily identify measurements (height, width, length), color, temperature, and the number of elements included in a package (pills, food items, etc.). An Intelligent Edge-based inspection system can do anything from counting the number of crackers in a box to determining if the right set of pins are included in a type of silicon. If a unit is found to be defective, the system can automatically reject the item and immediately notify operators that something may be wrong. These systems eliminate waste and improve product quality automatically and without human intervention.

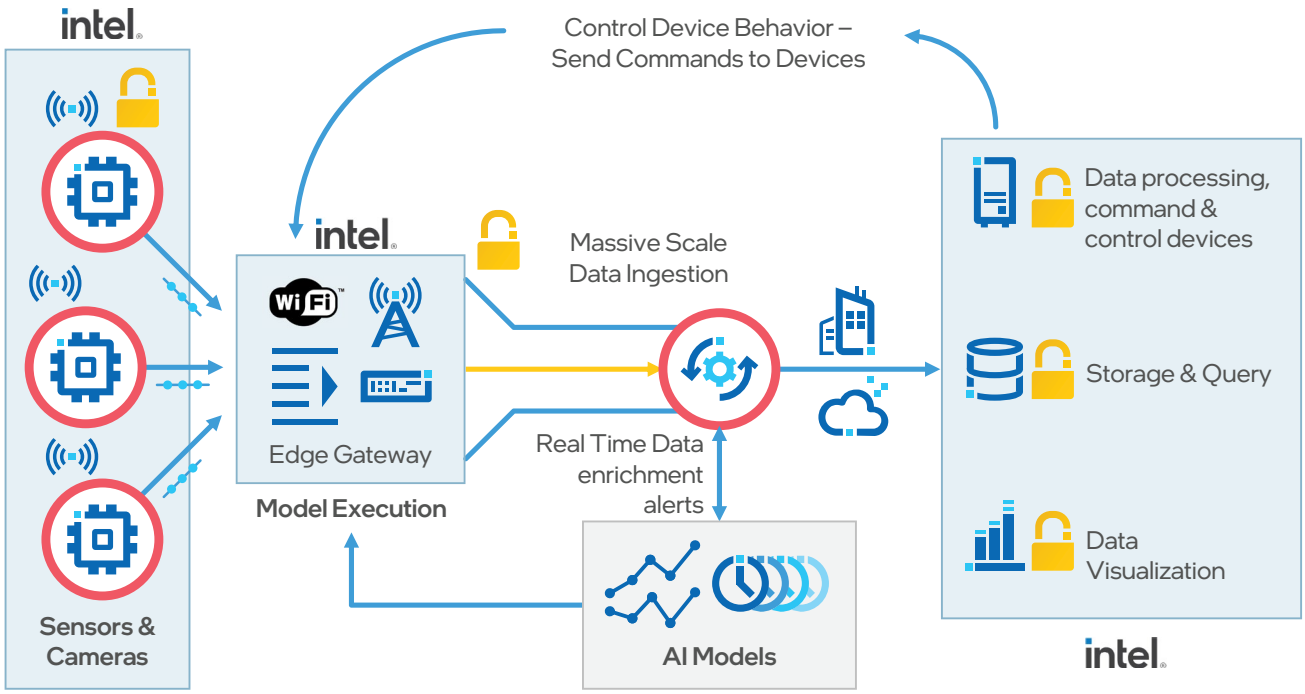

Figure 2. Typical Edge Architecture

Similarly, these same Intelligent Edge systems can be assigned to anomaly detection. Insight's Intelligent Edge can enable fully automated visual inspection solutions that consistently find defects that human inspectors often miss. This results in higher product quality using far fewer resources than traditional systems.

Insight's Intelligent Edge solutions also enable manufacturers to move from a traditional reactive maintenance approach to predictive maintenance. Since a single point of failure can shut down production across an entire facility, the cost to a business is significant. An Intelligent Edge from Insight and Intel can easily monitor equipment performance during normal operation to reduce the likelihood of failures by notifying operators of any risk. Whether it's vibration analysis, temperature monitoring, or some other metric, AI and an edge compute can save businesses significant downtime.

Employee safety can also benefit from an Intelligent Edge. AI-enabled computer vision systems can actively prevent accidents by providing automatic shutdown of systems and reducing severity through advanced notification.

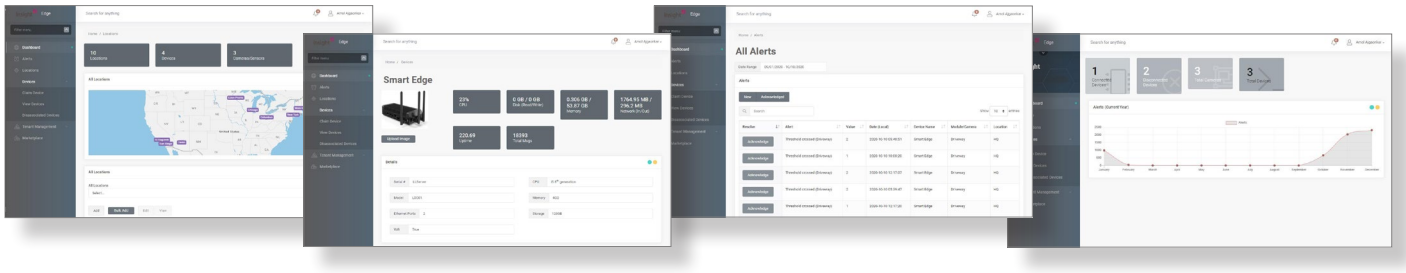

Figure 3. The Insight Edge dashboard helps manufacturers easily monitor equipment performance across multiple locations.

Insight + Intel = The Intelligent Edge

As Industry 4.0 and its adherents continue to proliferate, manufacturers need to invest in new architectures that give them the ability to compete effectively. The Intelligent Edge, combining distributed edge computing and AI into an integrated solution architecture, gives manufacturers the capabilities they need to increase productivity, improve overall product quality, reduce waste and downtime, and keep their employees safe.

How Intel and Insight Partner

Insight Enterprise and Intel have a long history together and a successful track record of working with manufacturers. Not only is Insight a Titanium partner with Intel, the highest level of partner possible, they also hold a seat on Intel's IoT Board of Advisors panel, which works with senior Intel executives to influence Intel's strategy and development in the IoT market. In fact, Insight was named the 2020 Intel Innovative Partner of the Year, specifically for Insight's Digital Innovation group around innovative IoT Solutions. Insight is also a member of the Intel Solution Provider Advisory Council (SPAC). Intel holds regular meetings with the members of SPAC, which includes key solution providers, to discuss the trends in the market and issues related to strategy, roadmap, and more. Via this council, Insight is able to provide direct feedback on new solutions.

Learn More:

- **Insight Enterprises**
- **Intel® Distribution of OpenVINO™ toolkit**
- **Intel® Edge Insights for Industrial**

Contact Insight Enterprises:

- **1-800-Insight**
- **Email: DigitalInnovation@drift.insight.com**

intel®

[1] Gartner (2018). What Edge Computing Means for Infrastructure and Operations Leaders.