

Case Study

Industrial and Food Manufacturing
Digital Transformation
through Edge Intelligence



Intel and Ingram Micro Canada Bring Industry 4.0 to Animal Feed Manufacturing

Enhancing sustainability through digital transformation and edge intelligence



WBM Technologies

Enterra is a pioneering business that's working to change things for the better. Their unique manufacturing approach produces protein for animal feed from insect larvae. Compared to cultivating animals for use in feed, the insect larvae Enterra cultivates require very few resources.

Insects are one of the most sustainable sources of protein available today, but Enterra wanted to further increase their sustainability, profitability, and competitiveness by maximizing the efficiency and predictability of their manufacturing processes. To achieve this, Enterra partnered with Intel® IoT Solution Aggregator Ingram Micro Canada and solution implementer WBM Technologies Inc. Together with Intel, these solution providers were able to help Enterra do more with their data through the power of the intelligent edge.

Challenge: Overcoming complexity and finding an efficient path to total connectivity

When it began its digital transformation, Enterra was looking for real-time insight into a segment of their operations. At the time, they were employing several machines, control systems, and protocols that could benefit from greater coordination. The data produced by machines, sensors, and other monitoring methods needed to be analyzed by a centralized system.

The transformation they needed was complex and costly. They found partners in Intel, Ingram Micro Canada, and WBM that could offer the range of technologies and expertise they needed. These partners were also able to develop an achievable, practical road map to Industry 4.0 that maximized value at every stage.

"It has been incredible to watch the vision of Enterra become a reality through the implementation of these solutions and to see the real impact of insights and operational efficiencies. We're ecstatic to be a part of the Enterra story and excited to help drive forward such meaningful work."

—Keith Daser, Director, Data & Security,
WBM Technologies



Solution: Bringing comprehensive Industrial Internet of Things (IIoT) connectivity with minimal disruption

- **Industry 4.0 data normalization:** The solution deployed at Enterra alleviated the need for a rip-and-replace upgrade by taking data from legacy systems and normalizing it with Intel-powered IoT gateways. The data could then be analyzed in near-real time by a centralized, on-premises data center.
- **Flexible connectivity:** Networking solutions built on Intel® architecture deliver high throughput and intelligent traffic management with optimized performance for a range of industrial connectivity standards.
- **SmartSense dashboard:** Optimized for Intel architecture, Ingram Micro Canada offers Enterra’s entire organization a highly consumable and unified view of their manufacturing performance, supply chain, and other business-critical data streams.
- **Hardware built for any asset and environment:** Intel® compute solutions are built for a wide variety of manufacturing scenarios and are available with hardening for harsh environments. This offered Enterra the flexibility to deploy edge intelligence where it was needed—from low-power asset tracking sensors to high-performance industrial PCs (IPCs) running converged workloads.
- **Built-in security measures:** Intel offers built-in security technologies that enhance data and device protection from end to end. From encrypting critical data in the cloud to protecting the hardware ports of machines on the factory line, Intel® security technologies can help reduce attack surfaces.

How it works

Leveraging Intel® connectivity technologies, Ingram Micro Canada was able to help Enterra avoid the need for costly machine replacements while still enabling them to achieve near-real-time analytics. Deploying Intel-based wireless sensors throughout their manufacturing facility, Enterra can capture and analyze a number of data points.

Wireless gateways collect data from machines and sensors and then normalize the data so it can be consumed and analyzed by a centralized system. These intelligent gateways are also able to effectively distinguish between data that needs to be sent to the cloud and data that can stay local, which reduces latency and bandwidth needs and costs.

Enterra’s on-premises data center is powered by Intel® Xeon® Scalable processors, which offer built-in security measures and excellent performance at the edge. Intel Xeon processors are also built on open, interoperable Intel architecture to maintain flexibility. Enterra’s Intel-powered data center analyzes and aggregates all the data coming from the machines and sensors.

Working with an Intel IoT Solution Aggregator meant that Enterra was able to deploy precertified solutions that have been tested and tuned, like the IoT Smart Monitoring Solution Kit. This reduced the time to value and complexity by eliminating the need to experiment with and validate solutions.

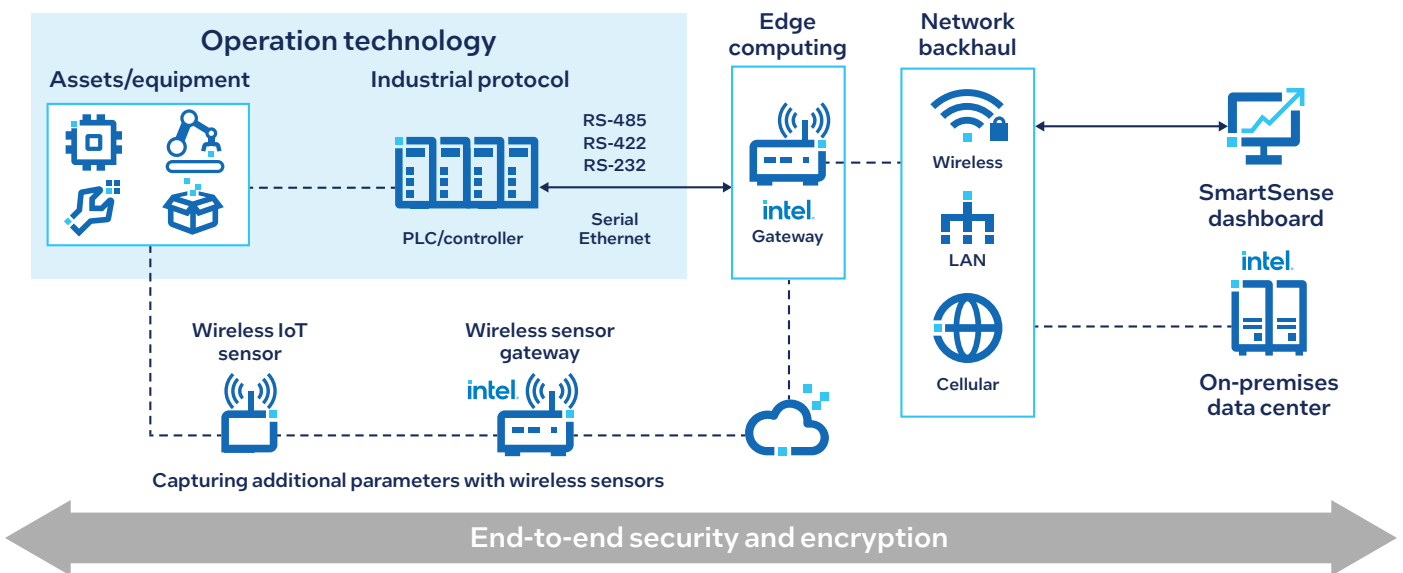


Figure 1: Connecting and securing Enterra’s assets and equipment through drop-in IIoT to achieve near-real-time analytics and visibility.

Intel® Core™ and Intel Atom® processors

By offering a wide range of compute solutions, Ingram Micro Canada was able to provide the right fit for a variety of Enterra's needs. Compact, efficient Intel Atom processors can enable computer vision solutions in tight spaces and bring intelligence to low-powered sensors. Intel Core processors are capable of converging multiple workloads, such as analytics, machine controls, and HMI, onto the same hardware to maximize efficiency and reduce the solution footprint.

IoT Smart Monitoring Solution Kit

Developed by IAconnects and available on the Intel® Solutions Marketplace, this system packages a variety of monitoring systems into a single, easy-to-implement kit. This creates a simplified path to deploying an intelligent monitoring solution to key aspects of your facilities. The solutions this kit enables can improve operational efficiency, employee safety and well-being, and your environmental impact. It allows for easy, web browser-based controls and dashboards.

Key benefits of the solution

Ingram Micro Canada worked closely with Enterra to maximize the benefits they enjoyed from Intel's interoperable architecture and broad range of compute and connectivity solutions. Together, they were able to achieve the following:

Shorter time to value: Rather than requiring a time-consuming and costly replacement of legacy machines, Intel and Ingram Micro Canada provided Enterra with intelligent sensors and gateways capable of capturing and normalizing machine data.

Optimized connectivity and networking: Compatibility with connectivity protocols such as LAN, Wi-Fi 6, 5G, LoRa, Durst, and others gave Enterra and Ingram Micro Canada many options to find the most efficient networking for every use case.

Flexibility: The solution deployed at Enterra can be deployed on-premises, in the cloud, or in a hybrid infrastructure.

Reduced data latency: The new unified approach leveraging the latest wireless connectivity allows Enterra to collect and analyze data from machines and processes faster than ever, in some cases in near-real time.

Increased data visibility: Collecting and analyzing data from machines, combined with wireless connectivity and an on-premises data center, means that everyone at Enterra has easy access to an up-to-date and uniform view of their business.

Enhanced security: As more of Enterra's data is collected and transmitted, built-in Intel® technologies can help prevent attacks and protect data and devices at the hardware layer.

Intel® IoT RFP Ready Kits

Available on the Intel Solutions Marketplace, Intel IoT RFP Ready Kits accelerate time to market for solution developers and integrators and reduce complexity for end customers. These technology bundles are field tested, scalable, and designed to help SIs get an optimized solution up and running faster.

Intel IoT RFP Ready Kits are integrated, use case-focused, commercial-grade technology bundles that serve a range of industries, including transportation, manufacturing, and smart cities. Designed to accelerate time to market and reduce complexity, the kits include hardware from sensor to cloud, domain-specific application software, and a distribution and support model.

Intel® Ethernet network adapters

Capable of high-speed connectivity using a wide variety of network protocols, Intel Ethernet network adapters offer the combination of flexibility and performance that Enterra needed to connect their systems and machines.

Solution aggregators speed transformation and results

As an Intel IoT Solution Aggregator, Ingram Micro Canada provides a single point of contact for hardware, software, and value-added services. Their mission is to help businesses like Enterra overcome the challenges of selecting and deploying the right IoT solutions. With their help, Enterra was able to implement customized IoT solutions in less time and with lower risks and costs.

To speed and simplify IoT deployments, solution aggregators leverage the Intel IoT partner ecosystem to provide end-to-end, ready-to-deploy IoT solutions. The solutions are tailored to each business's unique needs and include fully tested and proven multivendor bundles such as Intel® IoT Market Ready Solutions and Intel IoT RFP Ready Kits.

Benefits of Intel® IoT Solution Aggregators

The benefits of working with Intel IoT Solution Aggregators such as Ingram Micro Canada include:

- **Shortening time to market.** Businesses can rapidly deploy vetted solutions like Intel® IoT RFP Ready Kits and Intel® IoT Market Ready Solutions that include hardware, software, and value-added services tailor made for different regions and verticals.
- **Reducing total cost of ownership.** Deploying finely tuned, full-stack offerings from Intel IoT Solution Aggregators can help businesses lower the cost of developing, deploying, servicing, and scaling their solutions.
- **Realizing faster time to value.** With trusted Intel-powered solutions and connections, businesses can rapidly set up proofs of concept (POCs) and solve domain-specific issues, enabling them to get to market faster and realize a faster time to value.
- **Scaling efficiently.** The industry knowledge, broad market reach, and professional services provided by Intel IoT Solution Aggregators enable businesses to scale their IoT deployments quickly and efficiently.

Conclusion

Enterra's digital transformation is helping them realize their mission of changing the way we feed animals for the better. Having real-time visibility into their operations is helping them make decisions faster and more confidently. This transformation has given Enterra the technology architecture capable of supporting advanced workloads such as predictive maintenance, which can help Enterra detect issues with their machines before they become costly shutdowns.

Intel IoT Solution Aggregator Ingram Micro brought together all the technologies, solutions, and expertise they needed. Intel and Ingram Micro Canada connected machines, sensors, and other points of data generation throughout Enterra's facilities. The partnership provided efficient networking solutions and helped Enterra achieve near-real-time visibility into their most-critical manufacturing processes.

By putting its data to better use, Enterra is making its operations more efficient, profitable, and sustainable.

Learn more

Intel technologies for Industry 4.0

Intel is transforming manufacturing and other industrial business by enabling workload convergence and the latest Industry 4.0 advances.

[Read more about Intel and smart manufacturing >](#)

Manufacturing solutions on the Intel Solutions Marketplace

Intel offers a range of tested and tuned solutions that are ready to implement and are optimized to transform manufacturing and industrial operations.

[Browse precertified solutions >](#)

IoT Smart Monitoring Solution Kit

A smart digital system that can be adapted to suit a wide variety of requirements and buildings, this kit can enable use cases such as smart parking, indoor air-quality monitoring, and water leak detection.

[Get the details on the kit >](#)

About Ingram Micro Canada

Offering a range of products and services, Ingram Micro Canada is an Intel IoT Solution Aggregator capable of maximizing results from complex Industry 4.0 transformations.

ca.ingrammicro.com

About Enterra

A pioneering company in the use of insects in animal feed, Enterra is dedicated to staying on the forefront of innovation and sustainability in the sector. They are very energized by the possibilities that science and technology present to reduce harm on the environment while also delivering exceptional product quality.

enterra.com

About WBM

WBM Technologies provides outcomes-driven IT solutions, helping businesses reshape the way they operate to make them smarter, more secure, and more productive.

wbm.ca



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