(intel®)

Enable New Business Services with Intel IoT Technologies and Bluetooth® Devices

Create smart and connected products that collect data, automate maintenance, and receive alerts with Vensi's BlueApp.io* and Intel®-based gateways

Many industrial companies use hundreds of instruments and devices that collect data to help control processes, such as temperature and pressure gauges, ambient lighting controls, and flow meters. Yet companies looking to go further and transition to automating processes such as inventory tracking and machine maintenance for greater efficiency and lower costs have struggled with making that transition. The desired outcome is often to gain useful business insights that drive decision-making. For a complete end-to-end system targeted for enterprise applications, it is often useful to have scalable, secure, and manageable systems deployed.

Bluetooth® has paved the way for companies transitioning their devices, connecting easily with mobile technology. Bluetooth has gained significant market share with low-energy support and the recent release of Bluetooth 5.0. Plus, support for mesh and long-range connectivity further enables multiple use cases from a wide range of Bluetooth devices, from weighing scales to light bulbs.

Vensi and Intel offer a solution to companies seeking to harness and use all that data with Vensi BlueApp.io* and Intel® IoT Gateway Technology. Whether their focus is on home and building automation, industrial manufacturing, HVAC systems, lighting, or retail, companies can now bring more intelligence to day-to-day operations.

How it works

BlueApp.io, Vensi's cloud-based solution, connects any device wirelessly via Bluetooth to a powerful and secure Intel®-based gateway, then sends the information straight to the user on any platform.

Data and operating conditions are viewed securely on a desktop PC browser or on tablets and smart phones by simply downloading the Android* and iOS* BlueApp.io apps from Google Play* and the Apple Store*. The real-time, easy-to-use dashboard is where users can view all their sensor data in one place. Once the platform and gateway are set up, more sensors can be added with minimal coding.

While most Internet of Things (IoT) solutions provide tracking and monitoring capabilities, the Vensi BlueApp.io system provides the control over the different systems and devices. Control is handled remotely, from anywhere in the world. BlueApp.io can work with billions of types of existing devices without the need to modify or update them with newer protocols, providing the quickest path to a full-fledged IoT solution.
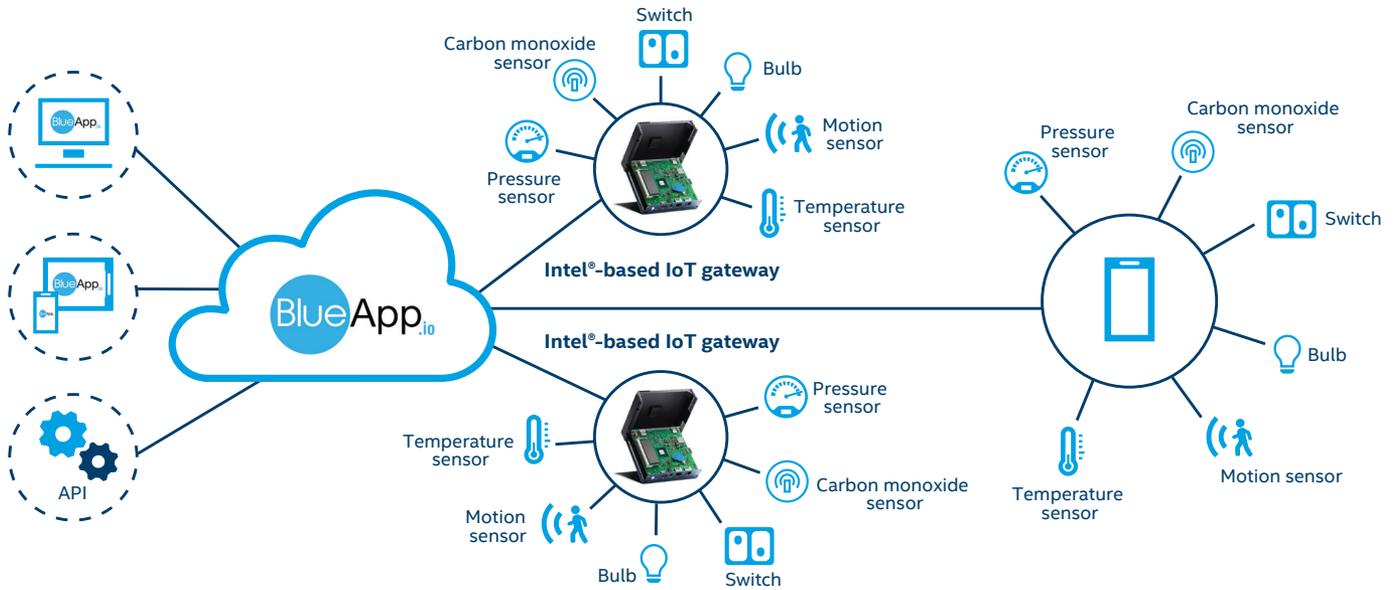
BlueApp.io supports various hardware adapters such as BluTerm*, a set of Bluetooth adapters that read and convert RS232, RS485, BACnet*, Modbus*, 40 to 20mA, and 0 to 10V registers and sends the data to a Bluetooth Wi-Fi gateway and then to the cloud.

Merging legacy and new sensors

As mentioned previously, one of the system's strengths is that even existing wired sensors can be turned into wireless technology and added to the system. Converting legacy sensors and gauges presents a huge advantage to industries that have already invested in tried-and-true technologies and standard operating procedures. Plus, by offering a unique end-to-end solution, Vensi offers companies previously unable to step into the age of smart things a new pathway. Vensi also provides full technical assistance to help each customer install and integrate BlueApp.io into their legacy systems to meet unique hardware and software needs.

Monitor and control multiple parameters

Almost any sensor type can be connected to the BlueApp.io solution:

- Temperature
- Pressure
- Motion
- Light
- Audio
- Gas (CO, CO_2, NO_2, VOCs)
- Humidity
- Serial devices

Up to eight sensors can be added to each gateway and send data simultaneously, with most applications requiring multiple gateways per site, depending on building structure (number of rooms and floors, square footage).

Once sensors are connected, the Intel-based gateway can filter and send the sensor data to the cloud for storage, management, and analysis. With the multitude of big data tools and technology, predictive analytics systems help transform the data into insights and recommendations.

The BlueApp.io solution, which works on multiple operating systems (OS X*, Windows*, iOS*, and Android*), is well suited for tasks such as:

- data collection and data logging
- remote monitoring
- real-time alerts
- control and calibration
- metrics
- firmware updates

Industrial

Protocols
MobBus, PROFIBUS, and BACNet* are a few of the protocols used extensively in various industries. Industrial systems are volatile and must be monitored to not exceed certain thresholds (e.g., temperature). Having the ability to monitor remotely in a critical condition is a huge benefit to industries. A systems administrator can receive alerts on his smart phone and monitor through a web browser. With various adapters to connect these legacy systems, BlueApp.io with Intel IoT Gateway enables the connectivity, bringing these systems into the twenty-first century.

Water flow management
Water flow and pressure are measured by flow meters in many different industrial applications. BlueApp.io can be used to control valves to shut off water flow if needed. The ability to work remotely via a web browser is quicker and avoids the need to have a worker on-site at all hours.

Industry 4.0

The fourth industrial revolution has been taking place over the last few years at the assembly-line stage, largely due to the ability of IoT to take industrial manufacturing to a whole new level. Currently, most assembly lines work at about 70 percent efficiency, but with IoT solutions, this can be elevated to about 90 percent, streamlining the whole manufacturing process while increasing profits.

In addition, automation and data exchange allow for quicker responses and recalibration of assembly-line components. For example, if a worker stops the assembly line because his monitor tells him something is out of line and needs recalibrating, the whole assembly process is shut down. With BlueApp.io, data can be analyzed much faster and the assembly line can automatically correct itself without human intervention, preventing manual errors. IoT solutions for industrial manufacturing help workers to make better decisions through real-time communication, and preventive maintenance gains intelligence since IoT solutions can determine the life cycle of systems and notify workers when a machine should be serviced or repaired.

Other industrial use cases include:

- **Food processing:** Keep food and beverages fresh by measuring multiple parameters simultaneously, monitoring pressure gauges to ensure equipment is operating properly, and setting alerts for critical operating conditions
- **Occupational safety:** Monitor air quality in office buildings and factories
- **Agriculture:** Monitor soil properties and humidity
- **HVAC:** Monitor temperature, refrigerant levels, and filter condition
- **Automotive:** Monitor VOCs in paint/auto body shops
- **Lighting systems**
- **Building automation systems**
- **Water consumption and wash cycles**
- **Retail beacons**

Intel-based gateways offer performance at the edge

The application-ready Intel IoT Gateway Technology that's part of the Vensi BlueApp.io can efficiently aggregate and filter data at the edge, allowing companies to analyze and act upon information closer to its source. Intel IoT Gateway Technology can provide the capabilities businesses need to work smarter with near-real-time analytics, local decision-making, and tighter process controls.

Plus, with Intel McAfee Embedded Control Security, critical hardware-based security of Intel® processors is tightly integrated with operating system and software security. This enables seamless, secure data flow from the edge to the cloud, protecting data in flight or at rest.

The Wind River OS* provides the dynamic performance, reliability, and scaling needed for IoT development. Based on the Yocto Project*, Wind River Linux* is tailor-made for IoT to help manage efficiencies and simplify integration within the heterogeneous computing environments.

Bringing industry into the future

With proven Intel scalability, security, compute performance, and remote manageability, the Vensi BlueApp.io and Intel IoT Gateways help businesses quickly establish and future-proof their IoT strategy, implement edge analytics that create value, and reduce long-term costs.

Learn More

To learn more about Vensi's BlueApp.io, visit **blueapp.io**.

To learn more about Vensi's BluTerm, visit **bluterm.com**.

To explore Intel IoT industry solutions, visit **intel.com/content/www/us/en/internet-of-things/industry**.