New Computing Products Enhance Automation

A new entry from IBASE keeps the company at the forefront of automation technology.

By Richard Slawsky

OVERVIEW

Automation and the Internet of Things are changing manufacturing around the globe, improving efficiency, productivity, and quality.

At its core, automation is a process in which tasks are performed by computerized control systems with minimal human assistance, while Internet of Things devices are digital tools that are embedded with sensors, processing ability, software, and other technologies that connect and exchange data with other devices and systems over the Internet or other

communications networks. In a manufacturing facility, processes that can be automated include everything from spot-welding an automobile frame to packaging goods for shipment, and Internet of Things devices can monitor everything from the temperature of the facility to the speed of the manufacturing line.

One study projects that the global industrial automation market grow from $191.74 billion in 2021 to $355.44 billion in 2028, a compound annual rate of 9.2 percent. Another estimates that automation can boost the productivity of the global economy by 1.4 percent. In addition, the number of IoT devices in service is expected to top 27.1 billion by 2025, up from 11.3 billion in 2020.

Developments in computing technology promise to further fuel that growth.

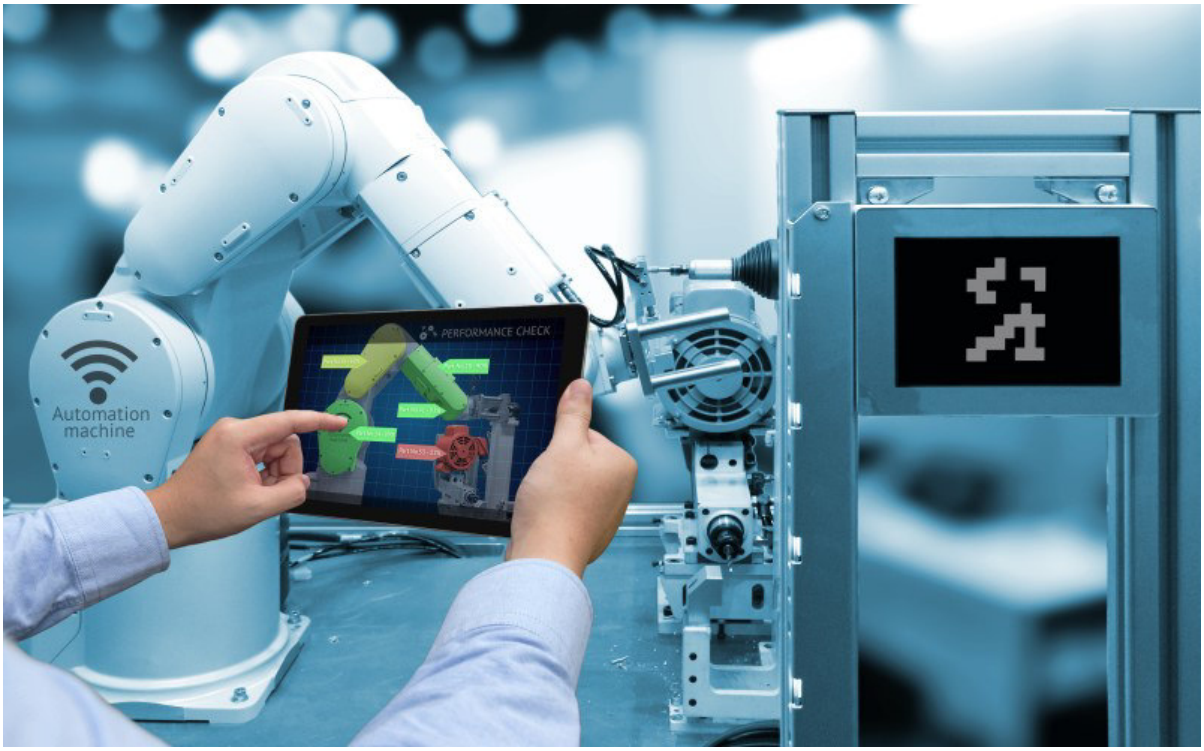
Benefits beyond efficiency

Along with serving to make manufacturing facilities more efficient, automation is improving conditions for workers as well, both by taking over the mundane tasks once performed by humans and by improving workplace safety.

According to statistics compiled by tech industry news site KommandoTech, nearly 70 percent of workers believe automation will bring opportunities to qualify for higher-skilled work. By taking over those boring, repetitive tasks, workers can be redeployed to positions that require a higher level of thinking.

Eliminating the need for workers to perform those tasks help reduce workplace injuries and with it, absenteeism. Robotic pick-and-place systems and vacuum hoist systems, for example, can help reduce back injuries by moving heavy objects instead of requiring a worker to do so. Taking over repetitive motion on an assembly line can reduce the incidence of carpal tunnel syndrome and similar injuries. Automation in unsafe environments such as those where dangerous chemicals are used or temperatures reach extreme levels eliminates the need to put live people into those conditions.

At the same time, IoT devices can be used to control everything from environmental conditions on the factory floor to monitoring equipment to avoid breakdowns. Motion detectors on lighting systems can turn off lights in unused spaces to help reduce energy costs, while a vibration sensor on a cooling system can signal that a machine needs maintenance before a costly failure occurs.



New products for advanced tasks

As the need for automation technology grows, companies are introducing new devices that can handle more complicated tasks and harsher conditions,

IBASE Technology, for example, has just introduced its Ultra-Compact IoT Gateway Edge Computing System. Founded in 2000, IBASE specializes in the design and manufacturing of robust industrial PC products, delivering high-quality products and excellent service.

The AGS103T is an ultra-compact IoT gateway edge computing system integrating the Intel Atom® x6000E Series processors (code-named Elkhart Lake) that deliver up to 4 cores with a 40 percent increase in CPU performance and improved graphics when compared with previous versions. Based on Intel's 10nm technology, the energy-efficient platform is suitable for embedded applications in factory automation, IoT gateway, edge computing, and automatic control systems.

The ruggedized AGS103T boasts several advanced features such as an extended operating temperature range of -20°C to 70°C (-4°F to 158°F) for peak performance under extreme conditions. It can be stored at temperatures ranging between -40°C and 85°C (-40°F and 185°F)

The AGS103T includes three Gigabit Ethernet ports for fast wired connections and multi-protocol communications, and over/under/reverse voltage protection. Useful I/O interfaces include 3042/2242 M.2 B-Key, Micro SD, four COM (RS232/422/485), two USB 3.1, and two USB 2.0 sockets.

In addition, the low-power AGS103T supports DIN-rail and wall mounting installation, and onboard TPM 2.0 hardware-based security to ensure platform integrity. It is available with Intel® Atom® QC x6413E or Intel® Atom® DC x6211E and with an option for additional storage for 2.5" drives (AGS103TS).

The 1.2 kg unit measures 218mm(W) x 110mm(D) x 57mm(H) (8.58”(W) x 4.33”(D) x 2.24”(H)) and can be mounted on a wall or on a desktop (wall mount kit included). The devices can be used with either the Windows 10 or Linux Ubuntu operating systems.

Automation and IoT devices promise to bring continuing benefits to the manufacturing facilities, improving efficiency for companies and better working conditions for employees. IBASE will continue to be at the forefront of those efforts.

AGS103T Ultra-Compact IoT Gateway Edge Computing System

AGS103T

AGS103TS

- Intel® Atom™ x6413E/x6211E Processors
- GPIO 4-in/4-out & 1x DVI-I & 1x HDMI
- Over/Under/Reverse voltage protection
- Extended operating temperature from -20˚C to 70˚C
- 9V~36V DC wide-range power input
- 1x 3042/2242 M.2 B-Key, 1x Micro SD, optional 1x 2.5" SSD
- 3x Gigabit Ethernet, 3x full-size Mini PCI-E sockets & 2x SIM card slots
- 4x COM (RS232/422/485), 2x USB 3.1 & 2x USB 2.0
- Supports DIN-rail mount, wall mount & TPM 2.0

About IBASE

Focused on the design and manufacturing of industrial PC products, IBASE Technology Inc. was created by engineers with experience in industrial PCs. The company produces single-board computers, industrial motherboards, CPU modules, embedded systems and network appliances for different applications in the gaming, entertainment, automation, medical, military, networking and security markets.

IBASE is a Titanium member of the Intel® Partner Alliance that offers exclusive resources for AI, cloud, high performance computing, and other solution areas to help plan, build, and deliver more customer value. As an Intel-recognized top-tier partner, IBASE works together with Intel and the ecosystem to deliver the most advanced products and solutions to our customers.

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