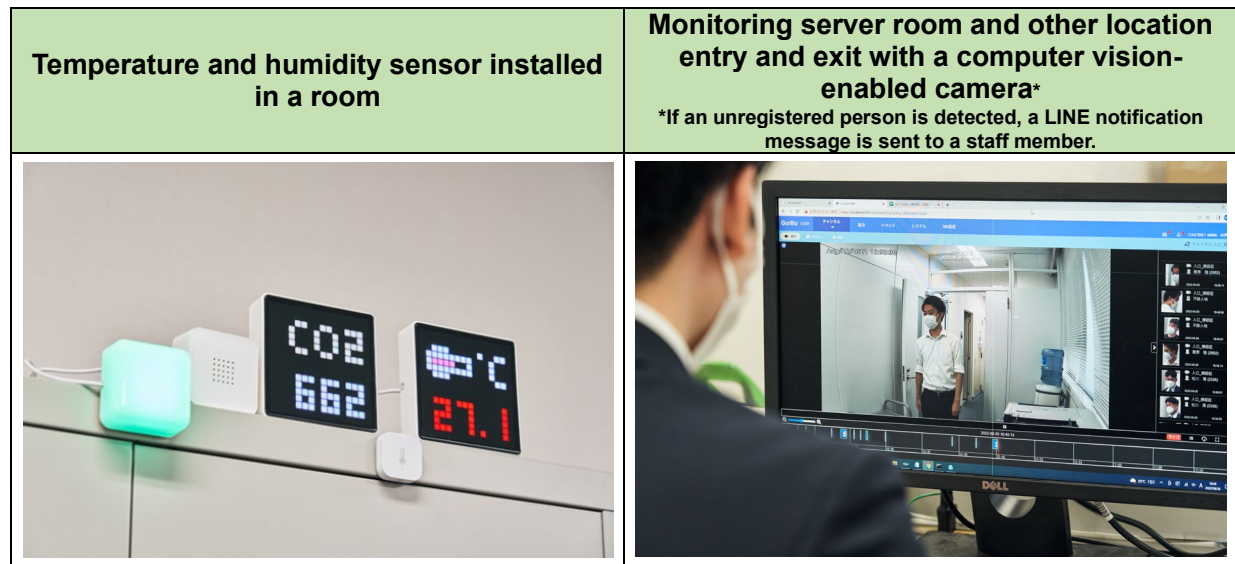


Pentel Introduces Gravio to Build a System Visualizing Usage Status of Offices Using AI and IoT without Coding

Tokyo -- Nov. 28, 2022 -- Asteria Corporation (Japan listed, Security Code: 3853) today announced that Tokyo-based stationery and office supplies maker Pentel Co. has introduced Asteria's AI-equipped IoT integration edgeware Gravio.



■ Background

Pentel manufactures and sells stationery and drawing materials as well as electronic devices such as touch screen panels and pen tablets. In recent years, the company has branched out into production of industrial robots and medical equipment.

Since 2019, Pentel has been promoting digital transformation (DX) to enhance its "manufacturing capabilities" by turning production plants smart through the introduction of IoT technologies. The aim is to increase manufacturing efficiency and improve quality. In 2021, the company expanded activities and established the Digital Shift Division, a unit in charge of DX of company-wide operations, but it faced challenges such as AI/IoT human resources development and development environment.

Pentel therefore adopted Asteria's Gravio, which enables the development of AI and IoT solutions without coding, and launched a project led by staff members in the administrative department and junior employees with little experience in IT tools and system development. The project team began working to accelerate digitalization of offices using computer vision-enabled cameras and IoT sensors.

The project included remote monitoring of changes in temperature and humidity in a server room, which had been managed visually, and development of automatic monitoring solutions for key facilities using the image recognition feature of computer vision-enabled cameras. The solution has improved the efficiency of facility management operations and the security performance of the entire facility with computer vision-enabled cameras and IoT sensors. In addition, motion sensors and a door sensor have been installed in shared spaces such as meeting rooms and restrooms to visualize the status of their use.

Pentel is also considering building a remote monitoring and abnormality detection system for server rooms of factories in Japan by utilizing IoT and AI. In the future, the company intends to further promote DX throughout the company by expanding the smart office initiatives spearheaded by the Digital Shift Division to other offices and factories.

<Overview of Pentel case study>

Location	Shared spaces and key facilities where entry is restricted such as server rooms, meeting rooms and restrooms
Devices used	<p>【Three computer vision-enabled cameras】</p> <ul style="list-style-type: none"> -Two for detecting visitors from outside the company using facial recognition technology for security purpose -One for people counting in shared spaces intended to improve the efficiency of facility use <p>【12 IoT sensors】</p> <ul style="list-style-type: none"> -One door sensor and six motion sensors used to improve the efficiency of facility use -Three temperature and humidity sensors and two CO₂ sensors intended to monitor the facility environment <p>【Tools which enable management of computer vision-enabled cameras and IoT sensors and visualization of data】</p> <ul style="list-style-type: none"> -One Gravio Hub (gateway) -Cloud-based BI tool: Data visualization using “Qlik Sense,” a notification message sent to LINE

■Business Plan of Gravio

As Japan is emerging from the COVID-19 pandemic, demand is growing for solutions to automatically monitor visitor flow in offices and avoid crowding in workplaces as more companies are gradually shifting back from telework to office work.

Asteria will continue to support the streamlining of facility management and implementation of advanced security measures in a wide range of post-pandemic business settings through the provision of Gravio, which enables the construction of solutions using AI and IoT in a short period of time without coding.

■About Pentel Co.

Pentel manufactures stationery and drawing materials such as gel ink ballpoint pen “EnerGel”, mechanical pencil “Orenz”, water-based pen “Sign Pen”, brush pen “Color Brush” and drawing materials “Pentel Crayon”, and sells them in more than 120 countries and regions worldwide.



For more information, visit <http://www.pentelworld.com/>

■About Asteria Corporation

Established in 1998 as Infoteria Corporation, Asteria developed its first no-code product in 2002. It sells software and services which connect a variety of in-house computers and devices. Its key product, ASTERIA Warp, is middleware which integrates data in different computer systems without coding. As of end-September 2022, 9,809 companies, mainly large and medium ones, had introduced the product. Another product, Handbook, allows users to carry around materials used for sales activities and meetings as well as product catalogues in electronic files on smartphones and tablets. A total of 1,670 companies and public institutions had adopted the product through end-September 2022.

For more information, visit <https://www.asteria.com/jp/en/>

■About AI-equipped IoT integrated edgware Gravio

Gravio is an AI/IoT integrated edge computing platform that can easily link data from general-purpose cameras and various sensors with various systems without coding. With simple operations based on intuitive screen design, various data can be collected and managed at the edge, and actions based on the data can be automatically executed. We also offer a free loan program for various certified sensors, eliminating the complexity around installation. The entire service enables simple and quick utilization of AI/IoT. In the new version, the AI image inference function has been further enhanced, and in addition to the pre-installed inference models, original image inference models created by customers can be used seamlessly without coding. Gravio will help users achieve digital transformation utilizing AI and IoT in a wide variety of applications.

For more information, visit <https://www.gravio.com/en>

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