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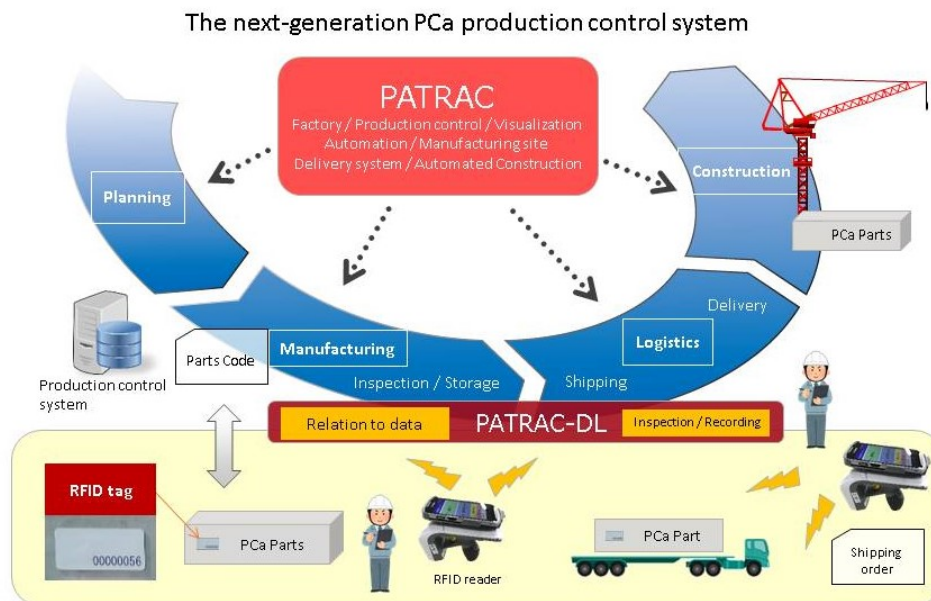
Start of development of next-generation PCa production management system "PATRAC" utilizing IoT

- First-step implementation of shipping process management system "PATRAC-DL" to the PCa manufacturing factory -

Sumitomo Mitsui Construction Co., Ltd. (2-1-6, Tsukuda, Chuo-ku, Tokyo. President: Hideo Arai) has started development of the next-generation PCa production management system "PATRAC (Precast Automatic TRACing system)" that utilizes IoT(Internet of Things) to improve quality and production for PCa materials, which is used as the main structure of super high-rise apartments.

As the first step, we have introduced the shipping process management system "PATRAC-DL (Delivery)" at the PCa manufacturing plant (*) and applied it to the construction site of a high-rise apartments in Tokyo.

(*)SMC Precast Concrete Co., Ltd. (Group of Companies) Ibaraki Factory



【Illustration of PATRAC (PATRAC-DL)】

■What the next-generation PCa production management system "PATRAC" aims for

①Optimization of business process

Business Processes can be optimized by "visualizing" information of people, goods and cost, which relate to production; the information includes work progress in each production area and status of material management at the PCa manufacturing plant, operating information of portal cranes and concrete plants etc.

②Construction of traceability system

Traceability system is built with high quality and the production process information of PCa parts are centrally managed by system, from planning to manufacturing, delivery to the site and maintenance after construction.

③Automation of production / supply process of PCa parts

All the production and supply processes, from manufacturing planning to installation by tower crane will be systemized and automated.

This will be achieved by introducing BIM linked to the design process and utilizing real-time component position information technology such as GNSS (Global Positioning Satellite System).



【PCa parts stored in the factory after manufacturing】



【Product confirmation work by reading RFID tags】

■Features of the shipping process management system “PATRAC-DL (DeLivery)”

- ①It is possible to collectively manage the traceability (inspection, storage location, scheduled shipping date, shipping / delivery, etc.) until the parts are shipped. The RFID tag attached to the manufactured PCa parts and the information in the existing production management system database are related to each other.
- ②Compared to the conventional visual inspection of the information marked on the PCa parts, it is possible to significantly reduce the confirmation work time in product storage management work. By using RFID tags, parts information can be read in a non-contact manner (within a range of several meters) with a smartphone-integrated reader equipped with an application developed in-house.
- ③Work efficiency in product shipping management can be improved by sharing real-time progress information, which also reduces the work time.
Reading work by the reader can be performed simultaneously in multiple areas in the factory.

■Next deployment

In the future, there will be more needs for labor saving at construction sites. SMCC will focus on technical development for improvements with the advantage of five PCa component manufacturing plants nationwide, including group companies. In particular, SMCC will promote automation of PCa manufacturing plants by incorporating technological innovations such as automatic transportation by actively utilizing ICT/IoT.

■Contact

For inquiries regarding this matter, please contact the following.

Sumitomo Mitsui Construction Co., Ltd.

Email: Info-tech@eb.smcon.co.jp