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For General Release

Information Services International-Dentsu, Ltd.

## **ISID and DAI-DAN Collaborate to Develop Smart Building Control Systems Using IoT**

*Creating IoT service base integrating control and information systems  
using Industry 4.0 communication standards*

Information Services International-Dentsu, Ltd. (Head office: Minato-ku, Tokyo; President & CEO: Setsuo Kamai; "ISID") is collaborating with building services engineering and installation company DAI-DAN CO., LTD. (Head office: Nishi-ku, Osaka; President & COO: Shohei Kitano; "DAI-DAN"), to launch verification testing of smart building control systems using IoT.

For this verification testing, ISID developed a control system prototype optimizing building lighting and air conditioning through linkage to programmable logic controllers (PLC) using open platform communications unified architecture (OPC-UA), the recommended communication standard for Industry 4.0, which collects environmental information such as temperature and illuminance, as well as location data of facility users and other inputs acquired from sensors inside the facility, storing it in the cloud. All communication between the various types of sensors, gateway devices and PLC is wireless.

In the verification tests, DAI-DAN installed this system in the showroom at its Technical Research Laboratory (Iruma District, Saitama Prefecture), where it controls optimal temperature and lighting for visitors to this facility. These tests will be conducted from May 17, 2017 until the end of July to verify this system's usefulness and identify any issues.

### **Overview of Verification Testing**

During the verification testing, test subjects use a test app on their smartphone to tell the system when it is cold or dark. The system identifies the location of the test subject and controls the air conditioning and lighting in the relevant area.

The SynapSensor IoT infrastructure developed by ISID is used for positioning in the facility. The "back end as a service" (BaaS) FACARE provided by ISID is used for data collection and management in the cloud and the creation of mobile apps. The OPC UA, an international standard, is used for communication between the cloud and PLC. General-purpose products are used for PLC that physically control lighting and air conditioners, as well as sensors that detect room temperature and brightness.

### **Future Prospects**

This verification testing focused on building lighting and air conditioning controls activated by individual test subject locations and actions. In the future, we will conduct testing with automated controls that detect the location of humans throughout the entire building. With the use of artificial intelligence (A.I.), we also think it will be possible to attempt energy optimization, including the control of heat sources.

In light of the results of this verification testing, ISID will accelerate the development of services in the IoT

domain and attempt to achieve further business enhancements.

**Contact:**

<For Business>

ISID 2020 Technology & Business Development Office

E-mail: [g-ss-info@group.isid.co.jp](mailto:g-ss-info@group.isid.co.jp)

<For Media>

ISID Corporate Communications Office

TEL: +81 3-6713-6100 E-mail: [g-pr@isid.co.jp](mailto:g-pr@isid.co.jp)

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