Press Release

November 20, 2019

DIC Corporation

DIC Commences IoT Demonstration Experiment of Flexible Wireless Sensors at AEON Fujiidera Shopping Center

—Flexible wireless sensors boast simple installation and removal; the ability to detect temperature, humidity and light intensity in any location; and superb safety even if trodden on or dropped from a height—

Tokyo, Japan–DIC Corporation announced today that it has commenced Internet of Things (IoT) demonstration experiment for its proprietary flexible wireless sensors, which can be used to measure temperature, humidity and light intensity, at AEON Fujiidera shopping center in Osaka. The experiment began in October 2019 and is being conducted in cooperation with shopping mall developer AEON MALL Co., Ltd.

Flexible wireless sensors finished to coordinate with the location of installation

AEON DELIGHT Co., Ltd., provides integrated facility management services for AEON Fujiidera shopping center using an open network system[1] with the aim of conserving energy, reducing operating costs and transforming the facility into an intelligent building.

The specific objectives of the demonstration experiment being conducted in cooperation with AEON MALL and AEON DELIGHT, are outlined below.

Demonstration Experiment

•Measuring temperature, humidity and illuminance at a height equivalent to the height of an average adult's head in areas where people congregate
•Measuring at multiple locations, which is not practical with conventional wired sensors.
•Visualizing previously imperceptible variations in temperature, humidity and illuminance.
•Confirming that the use of LoRa[2] significantly reduces the number of wireless network receivers needed.

AEON Fujiidera Shopping Center (Osaka)

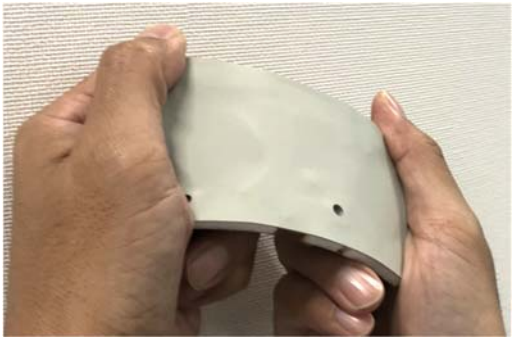
In general, shopping center had long sought to measure conditions in areas where people congregate, but several issues prevented the effective installation of conventional sensors. Of particular note, with conventional sensors:

- Space for installation is inadequate,
- Sensors are conspicuous and aesthetically unattractive,
- Installation in existing facilities is difficult, and
- The need to accommodate new tenants and floor layouts makes installation in appropriate locations impracticable.

DIC's proprietary flexible wireless sensors boast multiple distinctive performance features, shown in the graphic below, which resolve many of the issues that have plagued the installation of conventional sensors in commercial premises to date. These sensors are also environment-friendly, owing to the absence of screws, hard molded casings and other problematic structural components, making disassembly and recycling easy.

Product features

- **Stick on, peel off**
  Easy to install, easy to reposition
- **Thin, small and unobtrusive**
  Can be installed wherever desired
- **Soft and flexible**
  No worry even if trodden on or dropped from a height



After confirming the results of demonstration experiment, DIC aims to commercialize these flexible wireless sensors in fiscal year 2020. The Company is also considering broadening its flexible wireless sensor product lineup to include distance sensors, CO_2 sensors and others, thereby expanding applications to include improving office environments, alerting caregivers to the transmission of infection and preventing heat shock in nursing homes, protecting museum exhibits and warning individuals on construction sites when there is a danger of heatstroke.

DIC's proprietary flexible wireless sensors will be on display at the Company's booth at the 2019 Smart Building Expo in Tokyo, which will be held December 11–13, 2019, at Aomi Exhibition Hall, Tokyo International Exhibition Center (Tokyo Big Sight), Koto-ku, Tokyo.

Notes:

1 An open network system is a configuration that facilitates the connection via wireless network and the remote control of devices from different manufacturers, saving energy and ensuring efficient facility management.
2 LoRa (Long Range) is a low-power wide-area network (LPWAN) technology that permits long-range connectivity for IoT devices.

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* Related press releases:
DIC Develops Wireless Sensor which Realizes Soft Electronics (February 1, 2019)
http://www.dic-global.com/en/release/2019/20190201_01.html

Reference:

AEON MALL Co., Ltd.

Company name:	AEON MALL Co., Ltd.
Representative:	Akio Yoshida, President
Headquarters:	5-1, Nakase 1-chome, Mihama-ku, Chiba 261-8359, Japan
Date of establishment:	November 1911
Website:	https://www.aeonmall.com/en/

AEON DELIGHT Co., Ltd.

Company name:	AEON DELIGHT Co., Ltd.
Representative:	Kazumasa Hamada, President and CEO
Headquarters:	3-2, Minami Senba 2-chome, Chuo-ku, Osaka 542-0081, Japan
Date of establishment:	November 1972
Website:	https://www.aeondelight.co.jp/english/

AEON Fujiidera Shopping Center (site of demonstration experiment)

Official name:	AEON Fujiidera Shopping Center
Address:	10-11, Oka 2-chome, Fujiidera, Osaka 583-0027, Japan
Date of opening:	September 14, 2019
Website:	https://www.fujiidera-sc.com/ (in Japanese only)