July 6, 2020
Osaka Gas Co., Ltd.
Osaka Gas Business Create Co., Ltd.
Daigas Gas and Power Solution Co., Ltd.
Panasonic System Solutions Japan Co., Ltd.

Improvement of On-site Work Efficiency by Promoting DX Using a Private BWA System

-Upgrading Osaka Gas Senboku Plant to a Smart Factory-

Osaka Gas Co., Ltd. (Head Office: Chuo-ku, Osaka, President: Takehiro Honjo, hereinafter "Osaka Gas") will utilize a broadband wireless access (BWA) network (hereinafter, "this network") at the Osaka Gas Senboku Plant (Sakai, Osaka Prefecture) as part of its digital transformation (DX) strategy to improve the efficiency of on-site work at manufacturing plants.

To utilize this network, on July 1, Osaka Gas Business Create Co., Ltd. (Headquarters: Nishi-ku, Osaka, President: Masamichi Iwai), a wholly owned subsidiary of Osaka Gas, obtained a private BWA system operator license from the Kinki Bureau of Telecommunications of the Ministry of Internal Affairs and Communications, which allows the company to perform the operation and maintenance of communication equipment as a telecommunications carrier. Daigas Gas and Power Solution Co., Ltd. (Headquarters: Chuo-ku, Osaka, President: Nobushige Goto), which produces city gas at the Senboku Plant, will improve the efficiency of plant operation and maintenance by promoting DX, which uses this network.

Equipment supply, operation support, and maintenance for this network will be conducted by Panasonic System Solutions Japan Co., Ltd. (Headquarters: Chuo-ku, Tokyo, President: Tatsuo Katakura, hereinafter "Panasonic").

Specifically, with the goal of upgrading the plant to a smart factory, the companies will promote the utilization of sensing technologies to improve inspection work efficiency, audio and video to facilitate the transfer of experienced workers' skills, and remote witnessing to respond to emergencies more quickly.

At the Osaka Gas Senboku Plant, which has a vast site, PHS has been used as the means of communication within the site to ensure phone call connections even in the event of a disaster. Since this existing PHS system is required to conform to a new standard (need to conform by November 2022) and digitalization is required to improve work efficiency and facilitate the transfer of experienced workers' skills, Osaka Gas has considered updating the communication environment of the plant. A wireless LAN system requires a large number of antennas to build a wireless network due to its narrow radio wave coverage; therefore, cost is an issue.

The network introduced this time allows companies to build a safe, high-speed, and wide-range communication environment that is limited within their own buildings and premises.*1 This has made it possible to introduce a voice and video call system and business applications throughout the plant at low cost.

As the next step, Osaka Gas will improve the efficiency of inspection work by using sensing technologies to perform preventive maintenance and failure prediction of the plant, as well as creating a linkage between on-site work and the report creation process. The company will also proceed with the utilization of audio and video data transfer technologies to facilitate the transfer of skilled workers' experience and know-how, as well as the introduction of remote confirmation of work procedures to respond to emergencies more quickly.

In anticipation of local 5G*2 introduction in the future, the Daigas Group and Panasonic will continue to promote DX at the Senboku Plant.

■ Outline of BWA System

The BWA (Broadband Wireless Access) system introduced this time is a local wireless communication network that can use the communication standard "LTE" within a specific area. Similar to the LTE system used by mobile phone operators, this system is controlled by using SIM cards to ensure safe operation.

Private BWA is a wireless communication system that companies are allowed to use by creating a spot-based network within their own buildings and premises according to the "Guidelines for Introducing Local 5G"[*3] announced by the Ministry of Internal Affairs and Communications. In response to the start of application acceptance on December 24, 2019, Osaka Gas Business Create applied for a license for operating a private BWA system at the Senboku Plant and successfully obtained it.

<Features of private BWA system>

(1) Wide coverage

A private BWA system covers a radius of approximately 2 km, while the coverage of a wireless LAN is a radius of approximately 100 m. Therefore, fewer pieces of equipment are required to be installed, resulting in low cost.

(2) High-volume and high-speed communication

High-speed communication equivalent to a fixed line (maximum downlink 110 Mbps)

(3) Safety

Closed communication similar to PHS ensures a stable communication environment that can establish a reliable connection even in the event of a disaster.

■ Reference

▶ About Panasonic's wireless network technologies

Panasonic's wireless technologies have been used in the field of private wireless communication for public and private sectors since the 1950s, about 70 years ago. Particularly regarding "Private LTE technology," Panasonic is conducting a demonstration experiment of agricultural IoT in Iwamizawa City, Hokkaido, in collaboration with several companies and organizations. Panasonic will continue to strive to update on-site environments in order to realize optimal private wireless networks for corporate customers.

• Past press release:

Development of "Private LTE Network System" that contributes to the improvement of local public services, the elimination of the digital divide, and disaster prevention and mitigation (November 29, 2018)

https://news.panasonic.com/jp/press/data/2018/11/jn181129-1/jn181129-1.html

<Image source: Panasonic>

*1) To introduce a private BWA system, it is required to obtain a license, which is granted only to applicants who meet legal examination standards, such as the deployment of qualified wireless communication personnel.

* 2) Local 5G:
Apart from 5G systems built by mobile carriers, local 5G is a system that can be built by public organizations and private companies for their own use according to their individual needs.

* 3) Website of the Ministry of Internal Affairs and Communications (December 17, 2019): Guidelines for Introducing Local 5G
https://www.soumu.go.jp/main_content/000659870.pdf

<Company profile of Osaka Gas Co., Ltd.>

Representative	Takehiro Honjo, Representative Director and President
Head Office	4-1-2 Hiranomachi, Chuo-ku, Osaka
Establishment	April 10, 1897
Business description	Manufacture/supply/sale of gas, generation/supply/sale of electric power, etc.
URL	https://www.osakagas.co.jp

<Company profile of Osaka Gas Business Create Co., Ltd.>

Representative	Masamichi Iwai, Representative Director and President
Headquarters	Century Building 3F/4F, 1-4-16 Kyomachibori, Nishi-ku, Osaka
Establishment	March 10, 1977
Business description	BPO contract business, information and communication business, etc.
URL	https://www.ogbc.co.jp

<Company profile of Daigas Gas and Power Solution Co., Ltd.>

Representative	Nobushige Goto, Representative Director and President
Headquarters	3-5-11 Doshomachi, Chuo-ku, Osaka
Establishment	October 1, 2019
Business description	Operation and maintenance of gas plants and power plants, power generation and electricity supply, engineering
URL	https://www.osakagas.co.jp/company/group/daigasgpsolution/index.html

<Company profile of Panasonic System Solutions Japan Co., Ltd.>

Representative	Tatsuo Katakura, Representative Director and President
Headquarters	8-21-1 Ginza, Chuo-ku, Tokyo
Establishment	April 1, 2017
Business description	System integration, etc.
URL	https://www.panasonic.com/jp/company/pssj/company.html