"City Data Laboratory" : a data utilization skill-development program

Yusuke Kometani, Assistant Professor, Faculty of Engineering and Design

E-mail: kometani.yusuke@kagawa-u.ac.jp

1. Data utilization skill-development to promote smart city

A smart city is an attempt to utilize city data collected by ICT and IoT (Internet of Things) to realize comfortable lives of citizens and visitors. For example, "Smart Santander" operated by Santander in Spain has achieved some business efficiency by utilizing vehicle detection sensors, garbage collection sensors, public bus location information, real-time store information, etc.

The world's smart cities are incorporating perspectives of "cross-sectoral", "problem-solving", "evolutionary", and "citizen-centered design" to promote sustainable urban management. "Cross-sectoral" means a form in which data from different fields such as transportation, disaster prevention, and tourism are integrated and utilized. The "problem-solving" is a concept that gives priority to problem solving regardless of means of solution. "Evolutionary" is a form in which a service itself grows based on the service usage record. Finally, "citizen-centered design" means that citizens are actively involved in city management. The above means that there is a need for training of citizens who can contribute to solving problems using data and improving urban services.

2. Construction of a data utilization skill-development program "City Data Laboratory"

In order to develop human resources who can solve regional issues by utilizing data, project member of Kagawa University work together with e-Topia Kagawa, an educational facility for prefectural residents in Kagawa Prefecture. Takamatsu City in Kagawa Prefecture has introduced the European standard IoT data utilization platform FIWARE (Future Internet WARE) for the first time in Japan and is promoting smart cities. The program is the first initiative in Japan that utilizes FIWARE. It is a learning platform for Kagawa that enables improvement of ICT and IoT skills while working on application development aiming to solve regional issues through interaction with citizens with diverse backgrounds such as local communities, designers and engineers.

The program started in 2018. Citizens who are not familiar with ICT and IoT can prototype apps that utilize open data. According to processes of "collecting data", "storing data", and "using data", participants can acquire skills to convert things into data (IoT skills) and skills to convert collected data into information (ICT skills).

3. Achievements of "City Data Laboratory"

The achievements are as follows:

(1) We established an industry-academia-government collaboration system among NEC Corp., Kagawa University, and e-Topia Kagawa.

(2) We accelerated development of educational content by establishing a collaboration team of the faculty members who belong to several courses in faculty of engineering and design.

(3) There were 21/18 participants in 2018/2019. We provided a place for education and interaction with a variety of participants such as high school students, university students, university officials, local government officials, regional community members, system engineers, designers and others.

This program is still ongoing. We plan to further improvement of the program in 2020.