

Useful reference! Examples of Smart City

Efforts to resolve regional issues through Smart City have already begun in Japan. Here are the detailed descriptions of six examples presented in Chapter 2.

You may wonder what triggered the promotion of Smart City involving what kind of people and organizations? Hopefully, you will find them useful for regional development utilizing Smart City.

CASE 1 Citizen safety-care
(improving crime prevention in the region) (p43)

CASE 2 Wide-area disaster prevention
– developing robust region (p48)

CASE 3 Developing healthy region (p53)

CASE 4 Region with the leading-edge services promoted
by City OS & users' viewpoint (p58)

CASE 5 Regional development utilizing
sensor network (p63)

CASE 6 International business center by
way of digital & content (p69)

CASE 1

Citizen safety-care (improving crime prevention in the region)

Triggers of Smart City initiatives

1. To realize the "Region chosen by the parenting generation"
 - Projects were initiated with a focus on the safety and security of the city based on the "General strategy to revitalize region/people/jobs in Kakogawa-city"
2. High number of crime incidents compared to the average in Hyogo Prefecture and the problems of wandering of the people with dementia
 - As of 2016, the number of crime incidents was the fourth highest in Hyogo Prefecture, and there was very strong public needs to ensure the safety of children on their way to and from school. In addition, there was an issue of dealing with the missing persons with dementia (ten or so cases per month).

Effectiveness (Cost-effectiveness)

■ Decline in the number of known criminal offenders (per 1,000 people)

1.1335 (2017.5)

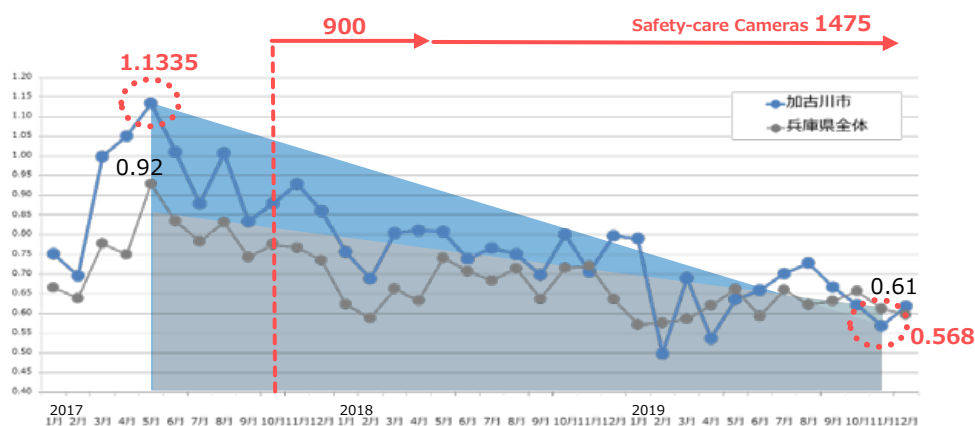


0.5683 (2019.11)

The 4th worst in Hyogo Prefecture

Less than the average in Hyogo Prefecture

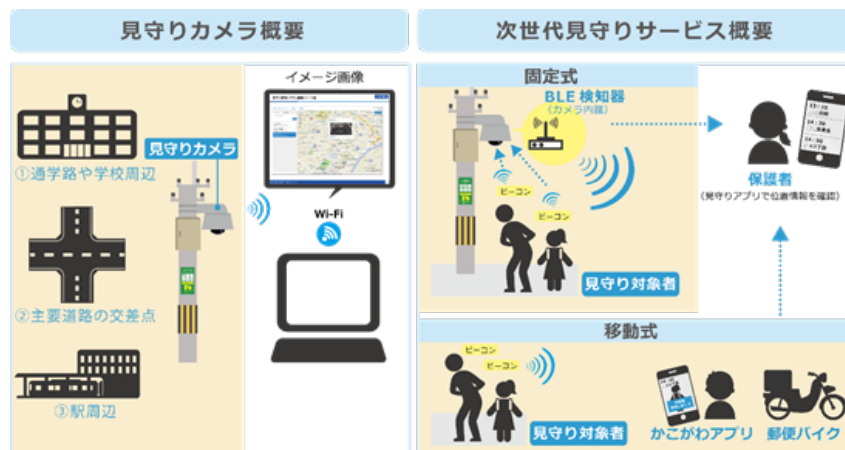
In Nov. 2018, it became less than the average in Hyogo Prefecture for the first time



Objectives and service overview

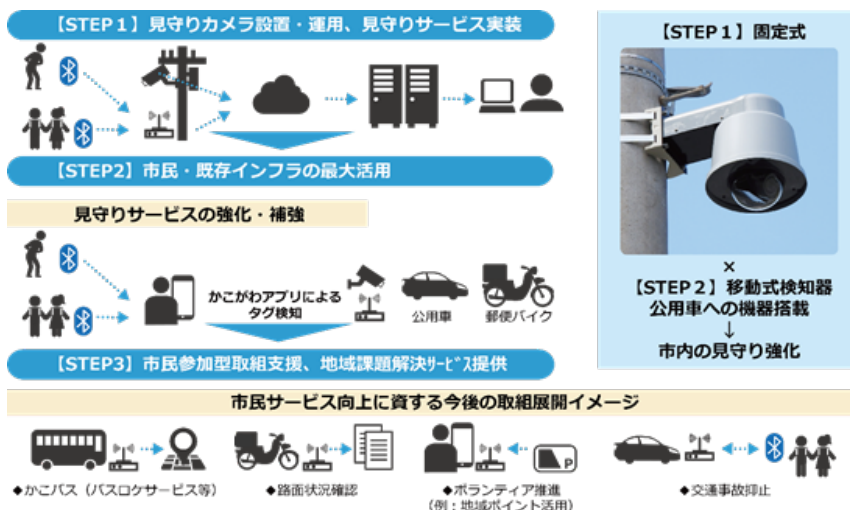
■ Implementation & operation of the region-wide safety-care information infrastructure, etc.

- Implementations of safety-care cameras and a next generation safety-care service (a public-private collaboration project)
- In safety-care services, common sensors which can detect safety-care tags (BLE tags) from multiple operators are developed
- In addition to fixed common sensors, Kakogawa-apps and mobile IoT devices for postal service vehicles are developed as well



■ Examination and implementation of smart services contributing to the enhancement of citizens' services

- Step-by-step examination and implementation of services from [STEP 1 & 2] Crime prevention regional services to [STEP 3]
- Promotion of Smart City transformation with an eye on next generation regional development utilizing AI/IoT/5G, etc.



The keys to success



Point1 Careful prior explanations to citizens (Citizens' affirmative

responses of 99.2%*¹)

- For the installation and operation of safety-care cameras by the city, it is necessary to approach the matter with special care such as paying attention to the privacy of the people whose images are taken.
- Open meetings were held at 12 locations in the city and the mayor himself explained about the installation of safety-care cameras to citizens



*¹ : According to the on-site questionnaire, 519 out of 523 people (99.2%) responded “Necessary or somewhat necessary”.



Point2 Scheme to make operational rules clear and transparent

(Scheme for citizens' understanding)

- “Ordinance on the Installation and Operation of Safety-care Cameras” was formulated and enforced, and operated under stricter conditions than what is stated in the Kakogawa-city ordinance on the protection of personal information.
- From the standpoint of crime prevention, the locations where the safety-care cameras are installed as well as the status of external availability of camera images are openly disclosed.

◆見守りカメラの設置場所※²



◆2018 年度の外部提供状況※³

外部提供理由	提供件数	提供先
条例第 7 条第 1 項 第 3 号による提供	644 件	加古川警察署
	9 件	高砂警察署
	3 件	明石警察署
	2 件	兵庫県警察本部
	2 件	大阪府天満警察署
	1 件	姫路警察署
	1 件	大阪府城東警察署
合計	662 件	

※² : https://www.sonicweb-asp.jp/kakogawa/map?theme=th_68#scale=7500

※³ : <https://www.city.kakogawa.lg.jp/soshikikarasagasu/kyodo/shiminseikatsuanshinka/ICT/mimamori.html>



Point3 Maximizing effectiveness by utilizing existing infrastructure

- As a next generation safety-care service, citizens' smartphones (Kakogawa App) and postal service motorcycles (In-vehicle IoT devices) are utilized to the fullest.

◆かこがわアプリ



◆郵便バイク（車載型IoT機器）



Future development

■ Collaborative use of the Kakogawa App (public administration application)

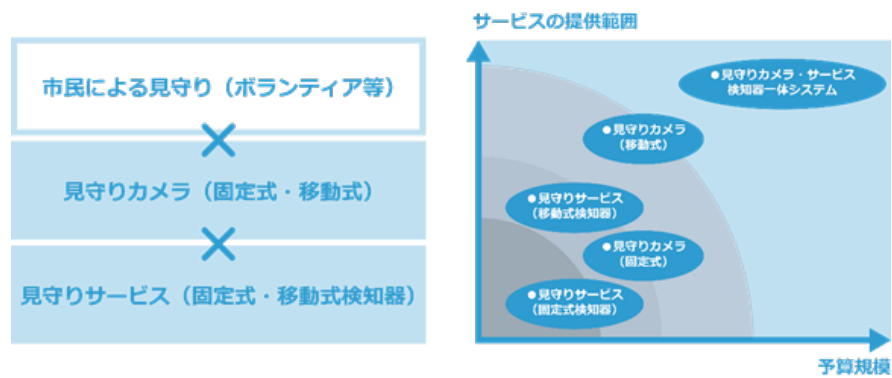
- Clone applications of the Kakogawa App are developed as a part of the SIP Smart City Verification Research (Prototype Android versions for neighboring 8 cities and 8 townships)
- Aim at social implementation with an eye on horizontal development (wide-area deployment) to other municipalities
- Based on that, detections outside the city are enabled (so long as the application is installed and the detection function is turned on) even when citizens visit other cities, hence aim at safe and secure regional development in wider areas



detect notification tags

■ Wide-area deployment of the initiatives (Assisting the implementation of measures appropriate for the municipality)

- Assist the flexible implementation of measures in accordance with the status (budget scale, etc.) of the municipality by the combinations of multiple services



■ Cross-sectoral utilization of the data platform

- Promote cross-sectoral data utilization by the data platform (FIWARE) for the purposes of disaster prevention & safety, parenting & education, tourism & culture, etc. in addition to the crime prevention initiatives of Kakogawa-city Wide-spread use and deployment of open data API)



Information source: Nikken Sekkei Research Institute K.K., Sohgo Security Services Co., Ltd., Kakogawa-city

Wide-area disaster prevention – developing robust region

Triggers of Smart City initiatives

With the underlying intentions to overcome declining population, improve regional vitality, and respond to rising risk of disasters, Takamatsu-city has begun the Smart City initiatives since FY 2017 under the theme of "sustainable regional development by the collaboration of industry-academia-private-public sectors" with the aim of resolving issues which cannot be resolved by the government alone. It has since implemented the "Smart City Takamatsu Promotion Council" as a place to share issues, and the "IoT Platform (incorporating FIWARE-based data utilization platform service for Smart City)" as a place to share data.

In addition, the disaster prevention initiative, which was one of the Smart City initiatives in Takamatsu-city, included the following issues.

- There is an urgent need for countermeasures against natural disasters such as the Nankai Trough Mega Earthquake, torrential rains, etc. in Kagawa Prefecture
- As there are workers and students coming from neighboring municipalities to Takamatsu-city, rapid information sharing in collaboration with neighboring municipalities is required in disaster responses
- With limited funding, the cost of implementing and operating the IoT platform and services is a significant burden for the municipality alone

Effectiveness (Cost-effectiveness)

近隣自治体でのIoTプラットフォーム共同利用

運用費負担の軽減

単独自治体
100%

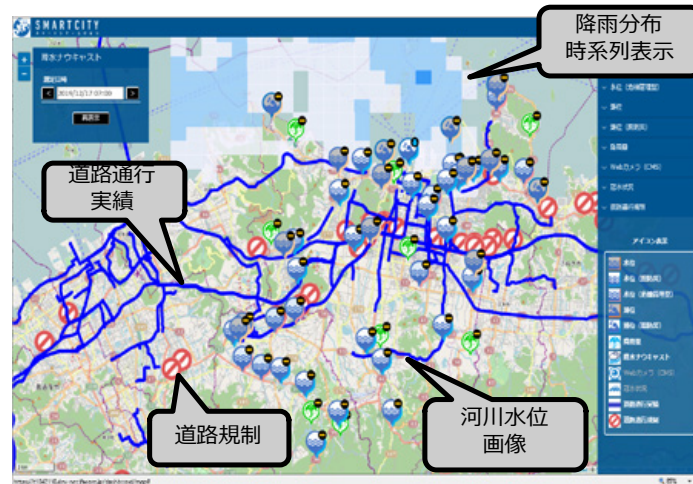
➡

複数自治体
共同運営モデル
1/N

Objectives and service overview

■ Wide-area rapid information sharing system at the time of disasters

- Construction of the IoT platform to store and share various data to carry out the wide-area disaster prevention collaboration with neighboring municipalities
- Centralized common display for relevant disaster prevention information such as road traffic information, weather information, river water levels, and tide levels, etc. Assisting the interpretation of mutual relationships between respective information and decision-making of the optimum and speedy countermeasures

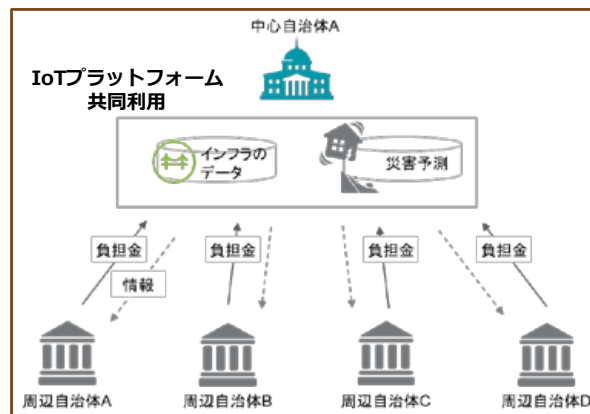


Rapid information sharing system

in Takamatsu-city, Kan-onji-city, and Ayakawa-town

■ IoT platform collaborative usage model with neighboring municipalities

- Development of the IoT platform collaborative usage model with multiple municipalities
- Assisting reuse of data and information collected in the region, and service software



Collaborative usage model conceptual diagram

The keys to success



Point1 Wide-area collaboration and inter-departmental collaboration within the municipality

- Wide-area collaboration plan (Seto-Takamatsu wide-area collaboration central urban area) was in existence and the activities were promoted under the collaboration of respective departments (Smart City, Policies, Crisis management, etc.) within the municipality.



Point2 Deepened mutual understanding

- The project was conducted with the deepened mutual understanding of the value of wide-area disaster prevention at the time of natural disasters through a series of discussions among Takamatsu-city, neighboring municipalities, and relevant business operators.



Point3 Sharing of the future values

- The future values for improved services were shared by the municipalities and residents through conducting explanations in advance to the relevant stakeholders such as the Prefecture and residents as well as the municipalities.



自治体アンケート



住民説明会（綾川町）

Future development

■ Enhancement of the wide-area disaster prevention system to cope with unprecedented disasters

Based on the knowledge gained from the verifications, in order to be able to provide prompt support from the moment of a disaster to recovery and reconstruction, we will work to enhance the wide-area disaster prevention services in collaboration with Takamatsu-city and the stakeholders in the region with the goal of making them available throughout Japan in the future.

■ Improved cost efficiency by realizing new administrative collaboration (IoT platform collaborative usage model) and the creation of a place to promote new local industries

We will realize the inter-administration information federation between different municipalities and others by the collaborative usage model, contributing to the reduction of administrative costs, and promoting the operation of sustainable City OS. In addition, we will create a place for the development of new service software utilizing the data and information collected over a wide area.

■ Expansion of new Smart City services and the influx of new funds into the region

We will aim to create an environment in which local companies and venture companies can expand their Smart City service businesses by encouraging the influx of new funds into the region through the vitalization of a place to promote local industries.



Enhancement of the wide-area disaster prevention system

Information source: NEC Corporation, Takamatsu-city