The 2nd

ASEAN-Japan Smart Cities Network

High Level Meeting

December 16, 2020

Brochure of Japan's solutions for Smart City

provided by JASCA Members

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This brochure is a menu of smart city know-how that Japan can offer. We hope this will help cities around the world achieve the SDGs and can be of help to improve the value of cities from the perspective of the environment, society and economy as advocated by the United Nations.

1. Background

Responding to Increasing Urban Problems and Global Challenges

The world's rapid urbanization (70% of the population will be concentrated in cities by 2050) is threatening to exacerbate problems such as traffic congestion, water and energy supply shortages, as well as sewage and waste disposal issues. Furthermore, the importance of smart cities as a solution is increasing due to the emergence of global issues including: ① the increase and intensification of disasters caused by climate change; and ② measures against infectious diseases such as the novel coronavirus and the model of social activities, etc., that can coexist with them.

Solving Social Issues and Economic Growth Led by Society 5.0 toward human – centered Society

Japan is advancing projects with the principles of Society 5.0 at the core when promoting smart cities that use digital technology. Society 5.0 is an initiative that aims to build a human-centered society while solving social issues and achieving economic development at the same time by using cutting-edge technologies that integrate cyber (digital) and physical (substance).

Japan's Extensive Urban Construction Experience and Know-How

Japan's strengths are the experience and know-how it has obtained through a variety of domestic and international urban development projects. For example, Japan has a track record of the world's best urban development projects in terms of disaster prevention, disaster reduction, and public safety; environmentally symbiotic cities such as eco-cities; transit-oriented development (TOD) cities with no traffic congestion; and achieving the development of the world's leading optical fiber and 5G infrastructure. This wealth of urban solutions will from now on be an essential foundation for creating new services and improving the quality of life in cities using digital technology.

1. Background

The Originality of Japan’s Smart Cities

Based on this wealth of experience and know-how and with openness and transparency as the central principle and concept of the whole project, Japan aims to build smart cities where all citizens and businesses can participate.

The operating system of Japan’s urban cities that embodies this concept is an information coordination platform. The platform collects and manages all kinds of urban data on the cities, thoroughly takes into account residents’ perspectives, provides complex and personalized services, as well as having data interoperability and distribution capability that can also be extended to other cities. Furthermore, Japan’s urban operating system has the ability to expand easily in response to regional growth and technological development, allowing the system to be maintained and developed continuously and agilely (can change quickly).

In this context, Japan’s smart cities are oriented toward free, trustworthy and credible norms. Under the norms, major companies are not allowed to monopolize data handling, excessive regulations are not imposed on the usage of data and the state is not allowed to monitor data handling. This is the “originality of Japan” that complies with the DFFT (Data Free Flow with Trust) presented at the G20 Osaka Summit.

Comprehensive Future Cities Pioneered by Super City

The movement to build smart cities that will fundamentally change the nature of society by using advanced technologies is rapidly progressing internationally. With a growing interest in global environmental issues and the ongoing coronavirus-outbreak, this move is being further accelerated.

For this reason, in addition to building smart cities that expand and develop by using digital technology based on the urban infrastructure developed so far, Japan will also promote an initiative of “Super City” that introduces digital technology into all fields of life services in cities from the earliest stage by making drastic reform in regulations and build a system equipped with multiple linkage across cities.

2. The Strength of Japan's Urban Infrastructure Development

① Eco-Cities (Environmentally Symbiotic Cities)

Thoroughly considering low carbon, resource recycling, and reduction of environmental burden

As fossil resources are scarce in Japan, the country has been striving to improve its energy efficiency in order to effectively use precious energy. The oil crisis in the 1970s led to the pursuit of efficient energy use, which has in turn led to a thorough consideration of the environment. This trend is evident in efforts to create eco-cities (environmentally symbiotic cities) that are environmentally friendly in terms of both hardware and software including low carbon society, resource recycling, and the reduction of environmental burden.

② TOD (Transit-Oriented Development)

Reducing traffic congestion and upgrading urban functions through urban development with a focus on public transportation

As urban development not dependent on automobiles, Japan has focused on public transportation (Transit-Oriented Development or TOD) in its urban development. Offices, hotels, and other commercial complex facilities are located within walking distance of railway stations, and residential areas are systematically located around railway stations in the suburban areas along railway lines. Such urban structures avoid traffic congestion and allow high-level urban functions to be concentrated in the city center.

③ Building Disaster-Resilient Cities (Resilient Cities)

Globally sharing the knowledge of Japan as a major powerhouse in disaster prevention

Due to natural conditions such geography, topography, geology and weather, Japan is prone to disasters including earthquakes and typhoons, etc. As Japan has experienced many disasters in the past, the country has made proactive efforts in disaster prevention and reduction for the protection of assets and people's lives In addition to strengthening social infrastructure, Japan is making the best use of technology for predicting and preventing disasters, warning systems, and technology for minimizing disaster damage in urban development.

3. Creating Future Cities “ + Digital ”

From now on, Japan will move forward to building a human-centered society (“Society 5.0”) that achieves both the resolution of social issues and economic development by adding “DX (Digital Transformation)” to existing strength.

Everything is connected to the Internet. Contributing to the efficiency of industry and life by providing information in real time.

IoT

Aggregate and analyze huge amounts of data in a short period of time. New findings expected from unprecedented analysis.

Big Data and AI

TOD

Disaster-Resilient Urban development

Eco-Cities

Automated Driving

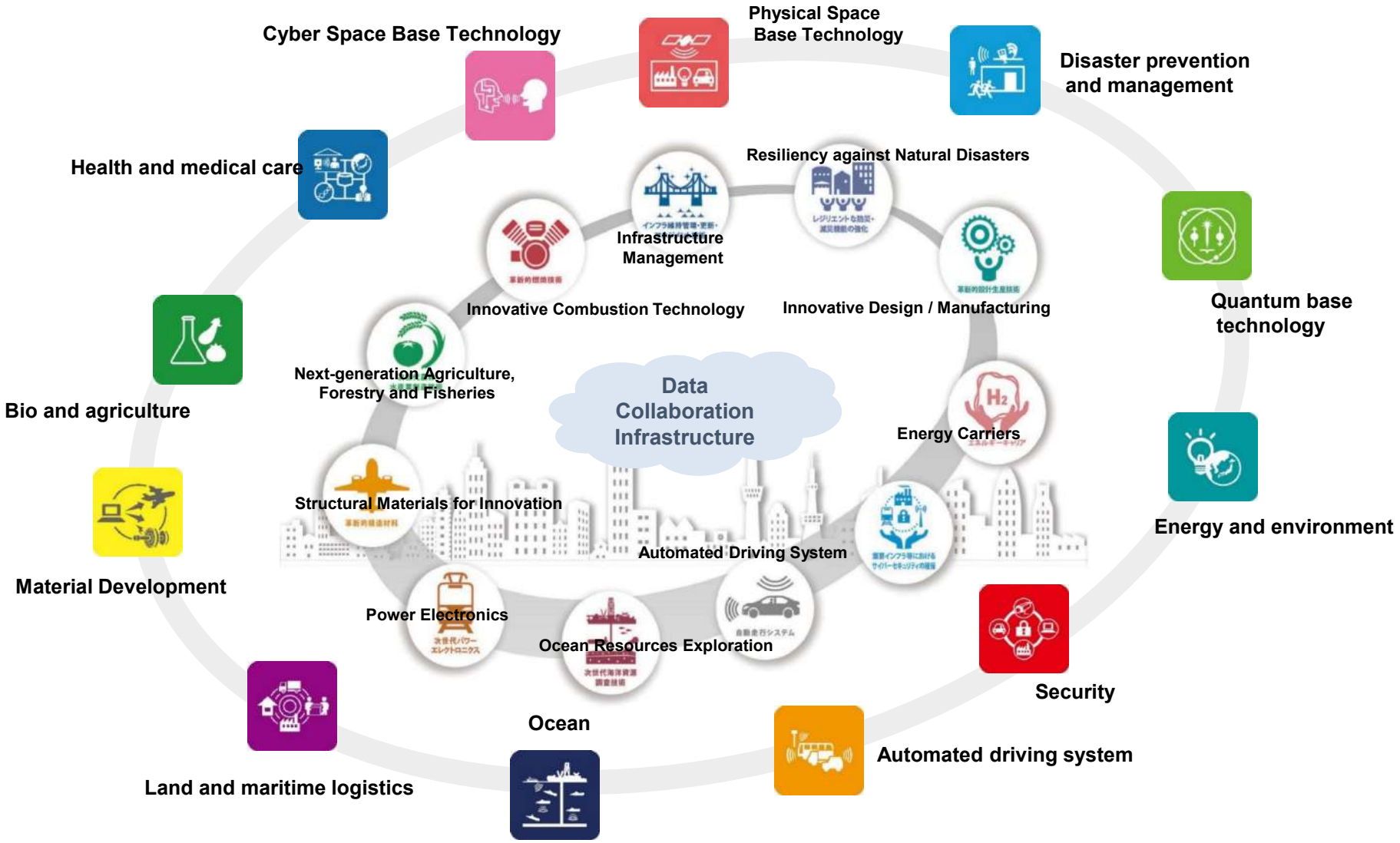
Contributing to driver shortage, securing local public transportation and MaaS. Eliminating human error and ensuring safety.

Biometric Authentication

Authentication by fingerprint and pupil is already widely used. New services introduction, including automatic bus fare payment, etc., is advancing.

3. Creating Future Cities “ + Digital ”

Japan is working on to realize data-driven smart cities in order to solve social issue and achieve economic growth, with assuring free, trust worth and credible norms by focusing on privacy and security.



Source: SIP (Cross-Ministerial Strategic Innovation Promotion Program)

4. Creating Future Cities “ Super City ”

Super City
J-Tech challenges SDGs

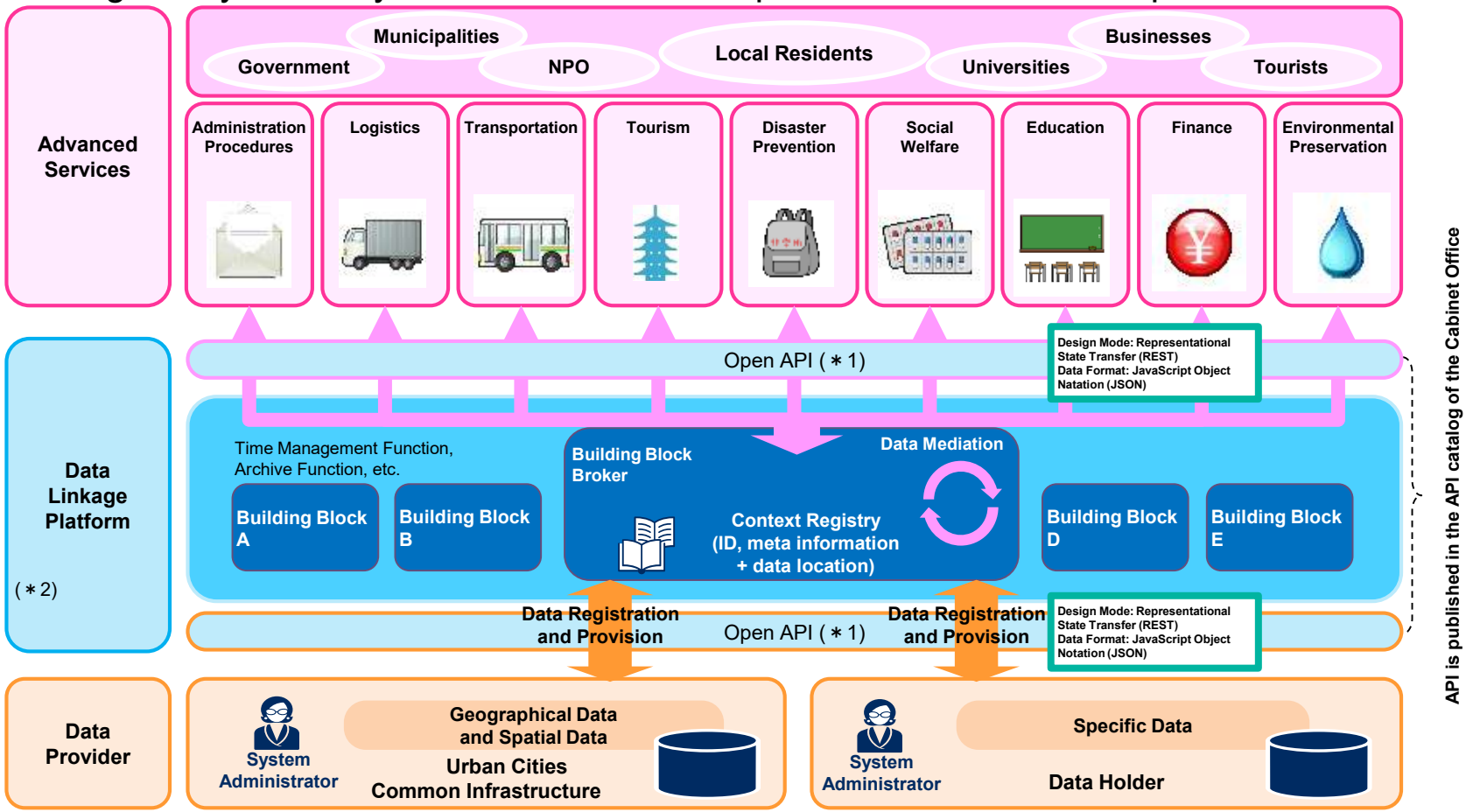
Japan will build Super City based on the National Strategic Special Zone system by implementing Data Linkage Platform to provide Advanced Service.

1） Data linkage platform

- ✔ Enables to promote data connections services between multiple fields and realize optimization.
- ✔ Data linkage platform is required to follow the safety standard and open the APIs to the public.

2） Drastic regulatory reform

- ✔ Super City can request the Japanese government to grant special measures of regulation.
- ✔ Each minister with regulatory authority can decide whether special measures will be possible.



(＊1) API: Application Programming Interface

(＊2) A decentralized data system is recommended. Data accumulation is allowed as necessary.

5. Brochure of Japan's solutions for Smart City provided by JASCA Members

① Realizing the world's safest and securest society (disaster preparedness and crime prevention)

Concept: Real-time notification of emergencies and hazards to residents in wide areas. Promptly providing security and safety.

Issues of Urban Cities and Goals

《Issues》

- Deterring terrorism and crime while protecting individual privacy.
- Responding to the increase in disasters associated with climate change (disaster prevention and reduction).
- Through the abovementioned measures, making residents' living more comfortable, thereby increasing the attractiveness of cities.

《Goals》

- Crime control.
- Improving urban risk assessment.
- Prompt and effective disaster prevention and reduction.
- Improving residents' lives.
- Increasing population inflow.
- Increasing the rate of attracting conferences, events, and regional business bases.

Japan Can Offer Various Solutions

- Detection, prediction, and advanced analytical skills to grasp on-the-spot situation. thereby reducing response time.
- Personal identification while ensuring personal privacy.
- End-to-end connectivity of ICT resources for rapid deployment and configuration optimization.
- Push-type notification of disaster and evacuation information by community applications by taking advantage of location information.
- Urban development using big data (human flow data, health data, etc.).

(Remarks)

- Japan is a safe country with one of the lowest crime rates among developed nations (ranked 3rd to 7th in recent years according to a United Nations survey).
- In addition, despite the fact that the United Nations disaster risk assessment report identified Japan as an area at high risk of all kinds of disasters, Japan was successfully able to control flood damage.

Places visited for on-site inspection

- Kakogawa City, Hyogo Prefecture
- City of Las Vegas (U.S.)

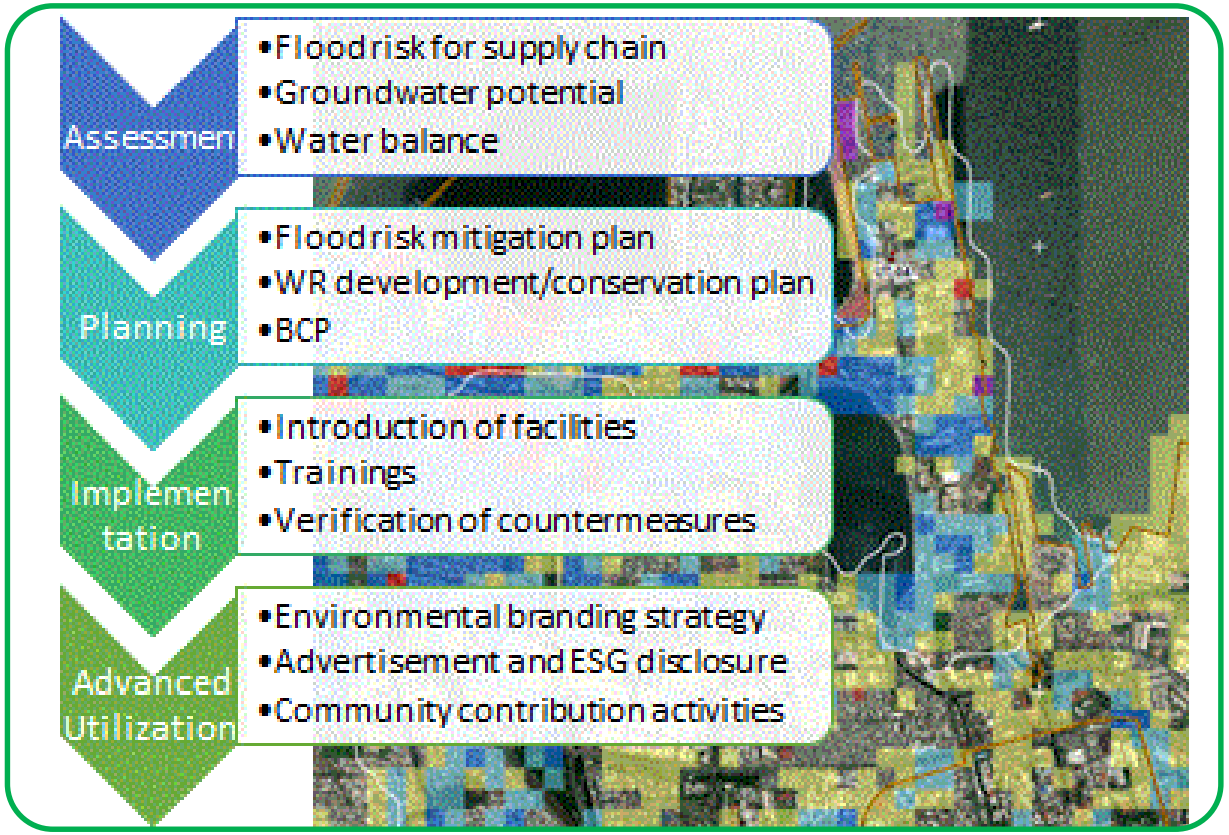
Participating companies and main operators

- Kakogawa City, Hyogo Prefecture
- NEC Corporation
- NTT

Integrated Services to Realize a Disaster Resilient Society

Overview

Indonesia and Japan are two of the most disaster-prone countries in the world, with a variety of disasters such as floods, land subsidence, tsunamis, earthquakes, and volcanic eruptions. Since the establishment of our Jakarta office in 1977, Yachiyo Engineering has been involved in a number of disaster management and reconstruction projects in Indonesia. Through these experiences, we have learned about the nature, culture, and people of Indonesia, and have learned how to introduce disaster risk management system that meets the needs of Indonesia.



Now, we propose disaster risk management solutions and business continuity planning at the national, municipal, and private entity levels.

Keywords ☑Renewable Energy ☑MaaS ☑Resilience

Contact Us

Yachiyo Engineering Co., Ltd.

Web https://www.yachiyo-eng.co.jp/e

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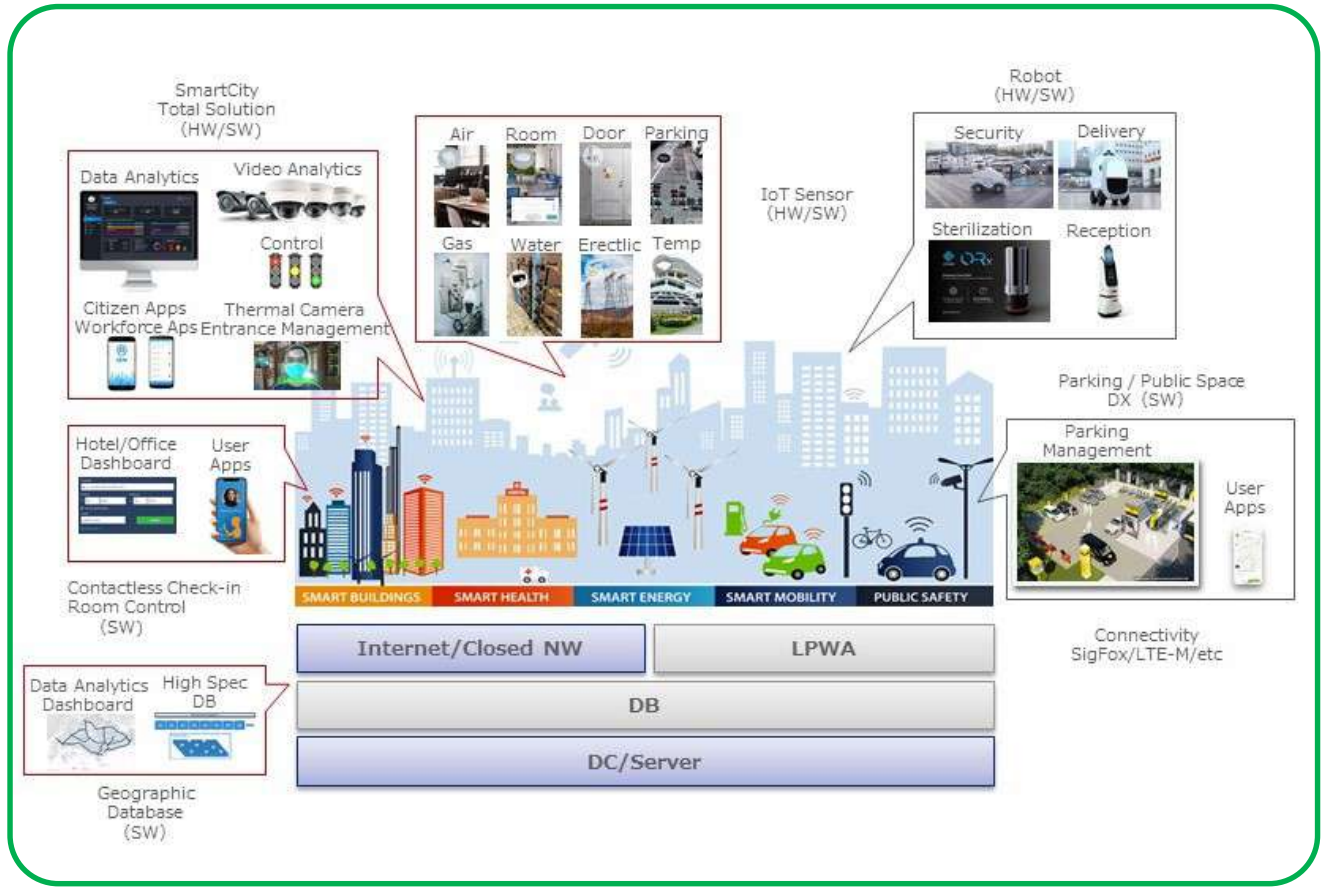
KDDI Smart City Platform

Overview

KDDI provides SmartCity solutions for municipalities and local authorities who seek safety and comfort in civic life. Once you experience the newest and proven KDDI SmartCity Platform that comprises high-quality sensors, Low Power Wide Area (LPWA) connectivity, client-oriented dashboard and powerful database enhanced by cutting-edge AI analytics, you must know that the ideal life people have been waiting for is only a step away. KDDI SmartCity Platform promise you a holistic and the finest solution strategy to various urban issues you may confront. Let's open the door into the next era with KDDI.



Keywords

☑Remote Sensing ☑Remote Monitoring ☑Smart Infrastructure Maintenance

Contact Us

PT. KDDI Indonesia

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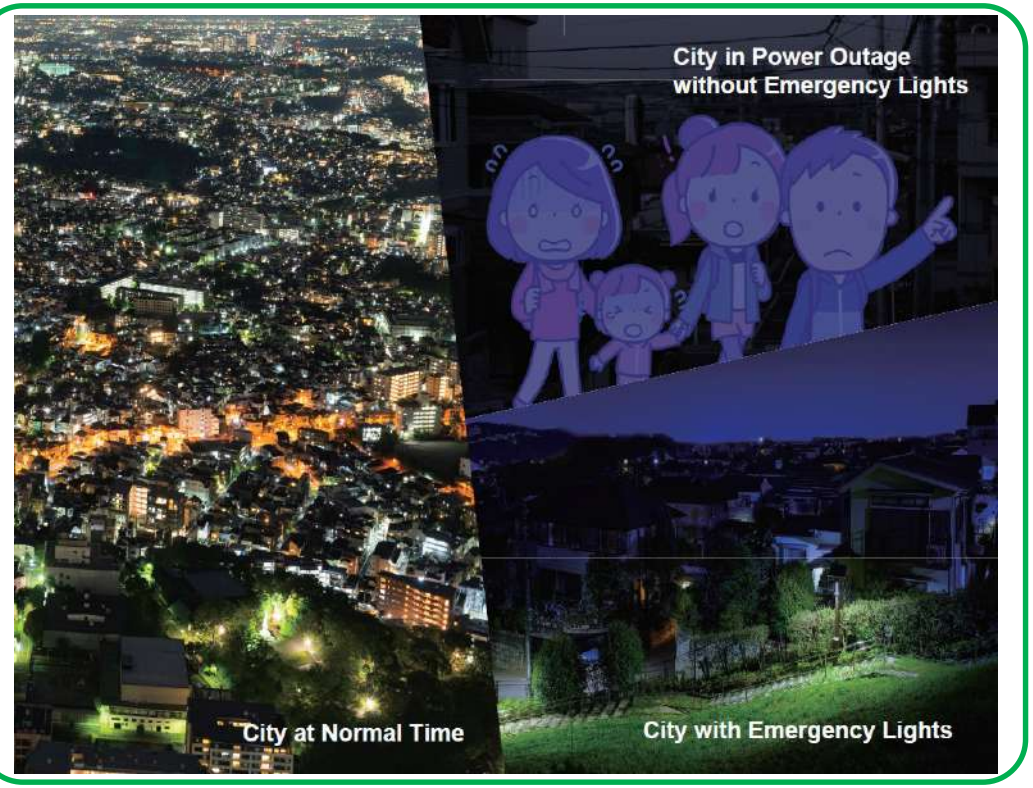
Area Disaster Prervention by Smart Lighting

Overview

Creating Communities Resilient to Power Outage - Proposal of AREA DISASTER PREVENTION LIGHTING
<Concept> Minimize disaster by Indoor and Outdoor Emergency Lights and Smart Lighting System combined with Smart City Network
<Process & Products>

1. Evacuation from home to outside - Home Emergency Lights that support safety checks and evacuation out of home
2. Evacuation from home to evacuation center - Smart Solar Street Lights to assist outdoor evacuation in power outage
3. Activities at evacuation center - Human Centric Lighting that can reduce the stress of evacuees and secure safety and comfortability during the stay.



Keywords

☑Disaster Prevention and Management

Contact Us

Japan Lighting Manufacturers Associiation

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Compact Dual Polarimetric X-band Doppler Weather Radar

Overview

Meteorological analysis solution utilizing the know-how of design and production technology of marine navigation radar which has the world's top market share.
<Comparing large radar (S / C band)>
It is possible to detect low-rise rain and snow clouds that cannot be captured by large radars that observe high-rise buildings over a wide area.
By reducing the size and weight of the radar, it can be installed on the roof of an existing building and also mounted on a car.

<Usage example in Singapore>
Six Furuno X-band weather radars have been installed across Singapore to develop an accurate and
reliable rainfall monitoring and nowcasting system.
For details, please refer to the following news and youtube.
https://www.pub.gov.sg/news/FeaturedStories/07022001
https://www.youtube.com/watch?v=b0QxQ3LDINY
Please also check other case studies in our website.
https://www.furuno.com/en/systems/meteorological-monitoring/#Case

Keywords ☑Remote Monitoring ☑Disaster Prevention and Management ☑Smart Weather News

Contact Us FURUNO ELECTRIC CO., LTD.

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Real-time Flood Forecasting System for Stormwater Management

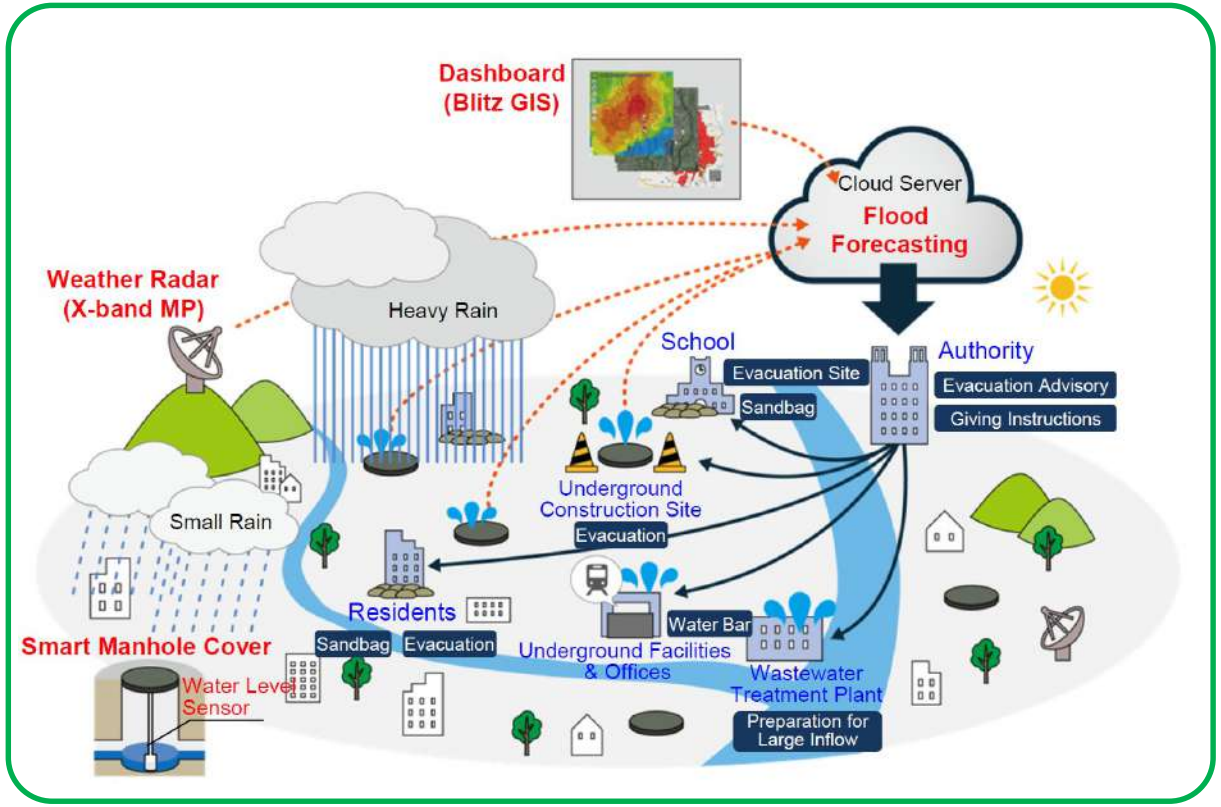
Overview

The system enables a flood forecasting in a real-time through the weather radar, the Smart Manhole Cover and the data-driven approach for drainage.

A rainfall is monitored and forecasted with high accuracy and resolution by the X-band MP Weather Radar.

A water level is monitored by the Smart Manhole Cover which includes a water level sensor, battery and IoT transmission device installed inside an underground drainage.

The data-driven approach is applied to forecast a water level and a flood risk in a real-time.



Based on the forecasted flood risk, related authorities can implement effective and prompt measures for flood prevention.

Keywords ☑Water level sensor ☑Disaster Prevention and Management ☑Resilience

Contact Us Nihon Suido Consultants Co., Ltd.

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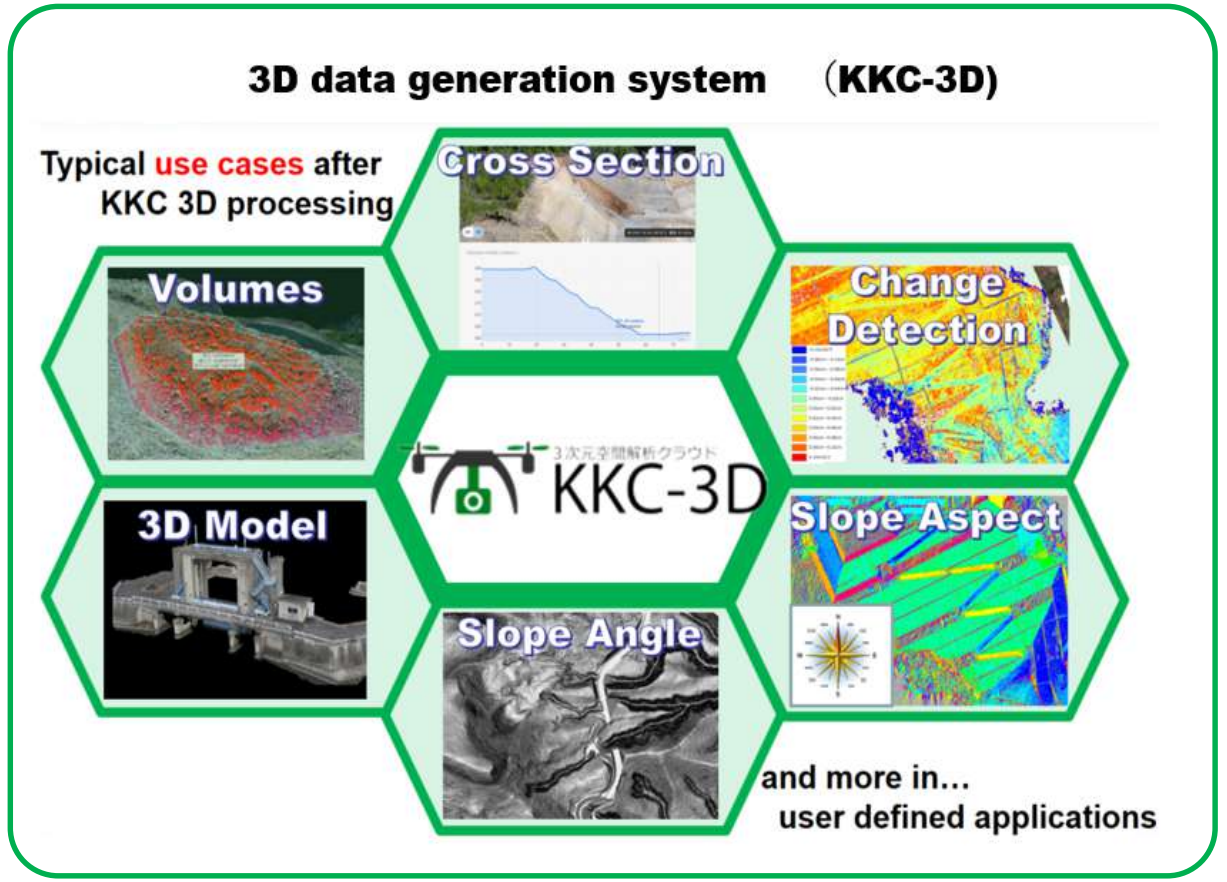
3D data generation system

Overview

Kokusai Kogyo (KKC) provides a service to create 3D data from satellite images, aerial photographs, or UAV images using the latest cloud system. Topographic elevation data (3D) is not only a vital information on land management, but also appropriate source for a disaster prevention. This service is designed for users with easy-to-use interface to create 3D data without owning the desktop software. Using 3D data generated from "KKC-3D" will enable, intuitive data modeling in AEC applications as well as AI based natural disaster simulations such as floods, tsunamis and storm surges in houses, industries, construction sites, etc.



Keywords ☑Remote Sensing ☑3D / BIM ☑Hazard Map

Contact Us Kokusai Kogyo CO.,LTD.

Web https://www.kkc.co.jp/english/index.html

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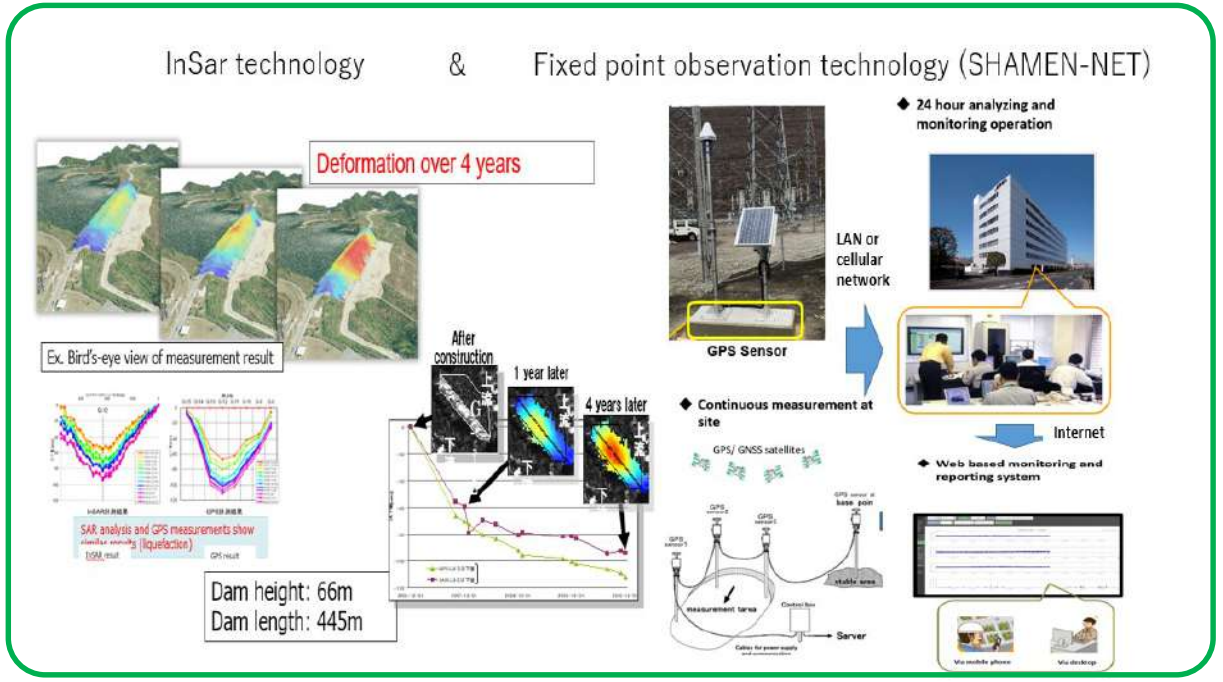
Ground deformation monitoring system

Overview

The latest InSAR technology, which irradiates ground subsidence and land deformation with microwaves from satellites and observes the deformation by interference wave measurement, enables holistic and wide-area monitoring. Also, GNSS based discrete point based land deformation monitoring at dams, embankments, landslides, and construction slopes is provided (shamen-net). In Japan, about 1000 GNSS sensors are installed at 300 sites for autonomous monitoring.



By monitoring as big data (InSAR and GNSS), it enhances to detect abnormal data such as land collapse and prevent disasters. Both methods can be combined as a "hybrid monitoring" service or applied individually. It can also support facility maintenance plans for large-scale infrastructure such as dams, levees, landfills, reclaim land, and utility facilities.

Keywords ☑Remote Sensing ☑Disaster Prevention and Management ☑Hazard Map

Contact Us Kokusai Kogyo CO.,LTD.

Web https://www.kkc.co.jp/english/index.html

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Drainage Pump Vehicle

Overview

1. High Mobility
Everything needed for pumping is mounted on the vehicle, including ultralight submersible pumps which can be easily handled and moved manually by hands. Therefore, it will be operational promptly after arriving at sight.
2. Wide Product Range
Discharging capacity could be selected from 60m3 to 20m3, depending on various flooded conditions.
3. Original Ultralight Submersible Pump
Pump in the unit is compact and light with 3 models, Extra-low Water Level Suction Model, High Capacity Model and High Lift Model.

Keywords ☑Emergency Drainage Pump

Contact Us KUBOTA Corporation

Web https://www.kubota.co.jp/product/pumps/products/systems/05.html

Email hiroshi.izumoto@kubota.com

Regional Earthquake Early Warning System

Overview

1. Technology and Superiority
・Built in Sensor : to detect P-wave and issue alarm immediately before big shaking arrive. So, people can evacuate before big shaking starts.
・False alarm prevention: realize the discrimination level 0.1gal of noise. In addition , to prevent false alarm by the alarm capabilities of than multi-point detection.
・Alarm in foreign language: possible alarm from 11 languages
・This system is very effective not only for earthquakes but also for tsunami.
2.Appeal
This system can do observation, issuing alarm and conducting evacuation drill.
This system can save people from Earthquake and Tsunami.
This system is very useful for people in the world.

Keywords ☑Earthquake Measurement and Prediction ☑Watching Over System ☑Disaster Prevention and Management

Contact Us Challenge Co., Ltd.

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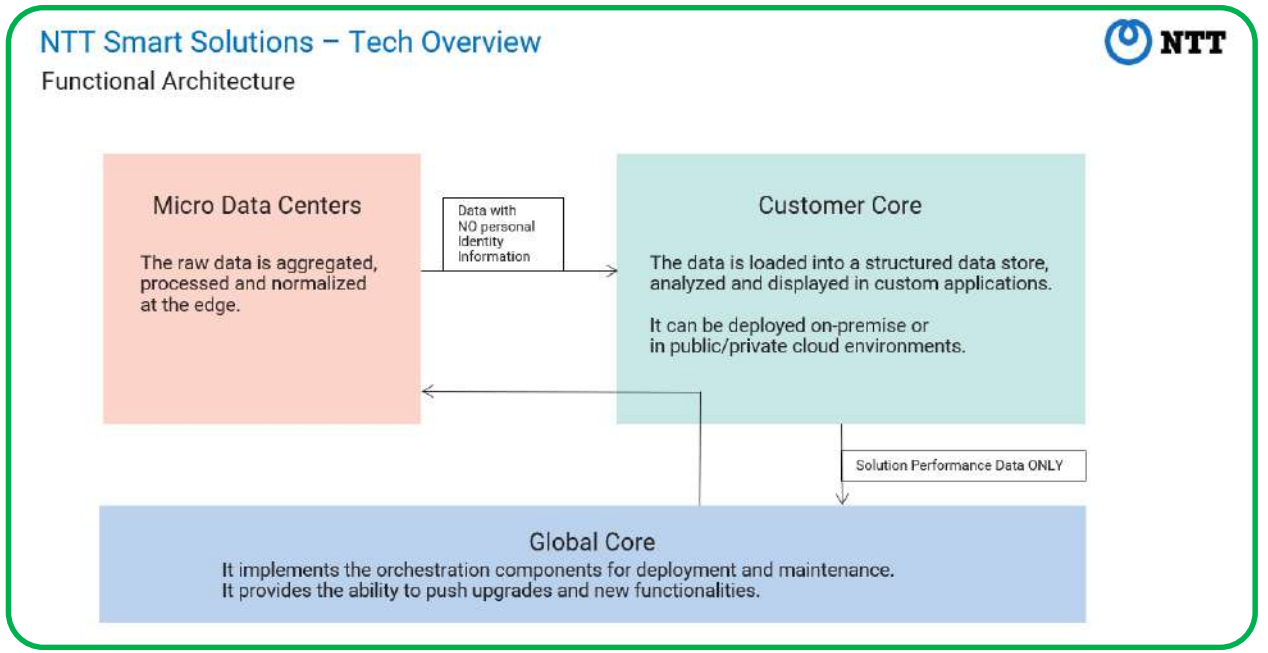
NTT Smart Solutions

Overview

NTT Smart Solutions are the best way to transform data into actionable intelligence.
The system quickly calibrates and curates data to reveal trends, discover powerful insights and generate predictive analytics that can drive better business decisions and planning.
The platform helps to improve the quality of decisions and makes an efficient resource allocation that saves money.



NTT Smart Solutions are designed with flexibility in mind and can deliver intelligent insights across multiple industries including public sector, manufacturing, retail, healthcare, sport and more.
The innovative NTT Smart Platform technology drives the solutions and enables organizations to start with a small and low-risk pilot program or a phased deployment and then scale fast and efficiently.

Keywords ☑Transport and Logistic Data Platform ☑Remote Monitoring ☑Project Management

Contact Us NTT Ltd.

Web https://www.global.ntt/NTT-accelerates-smart/

Email kelly.walker@global.ntt; satoshi.atobe.vz@hco.ntt.co.jp

The Focal Point of DRR Technology in Japan

Overview

Investment before disaster that save your community and economy.
Japan Bosai Platform, JBP is an association of Japanese private companies with leading bosai solutions. Our goal is to make society disaster resilient and sustainable by sharing Japanese bosai solutions with the world.

JBP's strength lies in the cooperation and wide-ranging technologies of its more than 100 member companies and organizations. Unlike a private company, our neutrality enables us to respond rapidly with optimized solutions. We are helping countries around the world to invest before disasters to save lives and strengthen their economies.

"Bosai." Born in Japan. Now global.
A holistic approach to saving lives and economy from disasters in Japanese.

Keywords

☑Public-Private-Academic Partnership solutions ☑Variety of 100+ members ☑Online database of DRR

Contact Us

Japan Bosai Platform

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Email info@bosai-jp.org

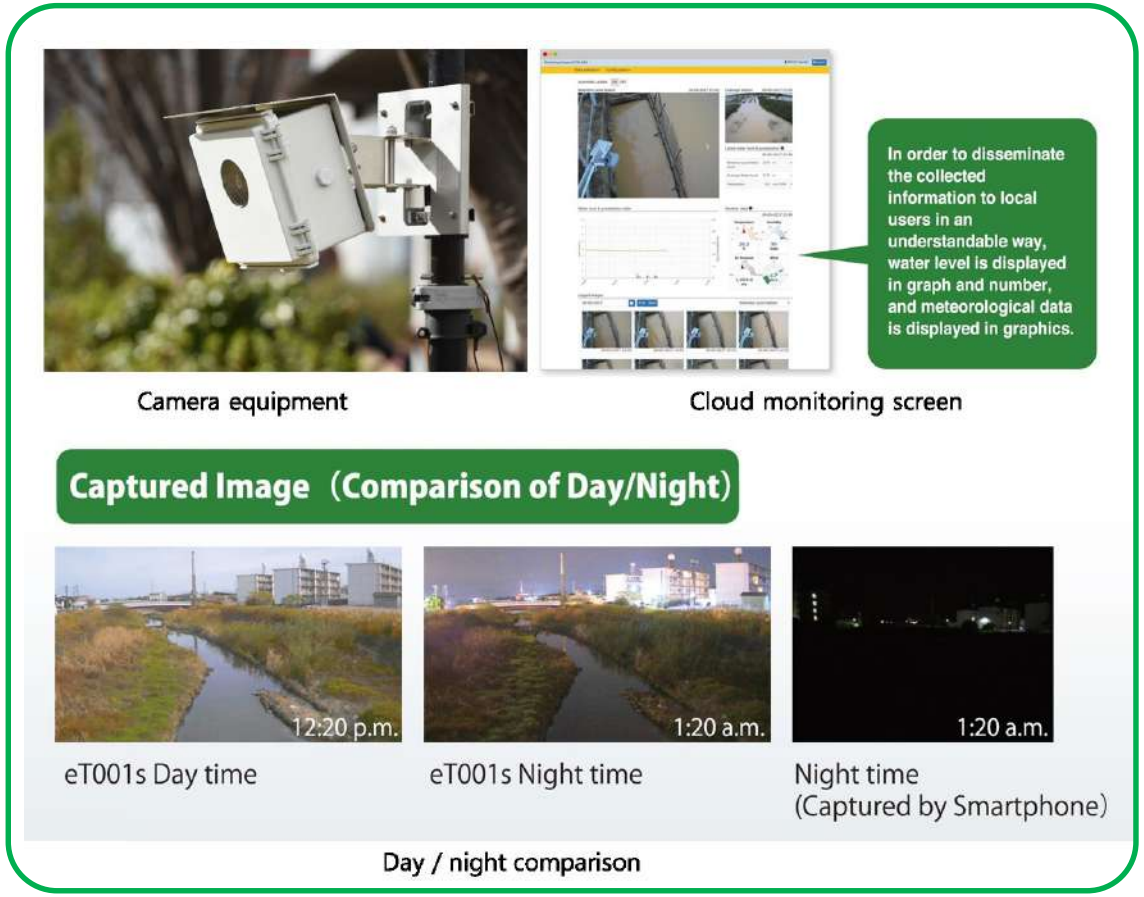
Cloud-based Disaster Monitoring System eT001s

Overview

eT001s is a cloud-based disaster monitoring system which realized an instant installation regardless of the levels of infrastructure development. Since it does not need any communication/power cabling installation, users can remotely monitor disaster-stricken
area even in the disaster situation when communication and power lines do not function.

Features

- Transmission of images and data to a cloud server by wireless network. Effortless installation to places where power line is unavailable.
- Users can customize the system as needed by adding various sensors such as weather sensor and water level sensor.
- Secure monitoring in the moonlight. *Extra lighting equipment can be attached.



Keywords ☑Flood Monitoring System ☑Cloud-based Monitoring Camera ☑Security Camera

Contact Us

eTRUST CO., Ltd.

Web http://etrust.ne.jp/corporate/

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Early Warning System for landslide and flood

Overview

Our company provides a monitoring system including measuring instruments for disaster prevention.
Damages from floods and landslides caused by torrential rains that are becoming a serious problem around the world.
Our system catch slight changes in mountains and rivers and quickly inform the administrator of the danger.
Specifically, it measures the movement of the mountain slope or the river water level, and judge if it becomes dangerous.
Monitoring data can be checked at any time on a PC or smartphone.
The Administrators can encourage local residents to evacuate using the information.
In this way, our system contribute to protecting residents from natural disasters.

Keywords

☑Early Warning System ☑Landslide ☑Flood

Contact Us

OSASI Technos Inc.

Web http://www.osasi.co.jp/en/

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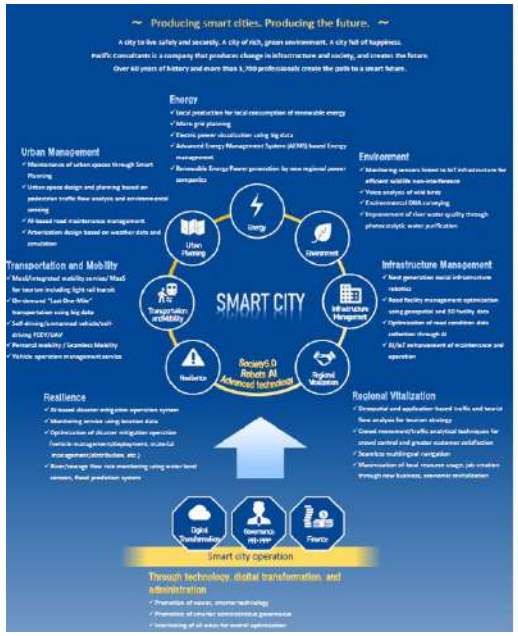
Program and Project Management for Smart City Project

Overview

Through our wealth of experiences of TOD and smart city projects in Japan: Shibuya station and Shiodome station redevelopment, area management/design/operation project in the roadside station Mutsuzawa Michi no Eki project, etc.,

PCKK has been providing program/project/operational management services for smart city development overseas such as in Thailand, Malaysia, China.
In the Shibuya and Shiodome project, PCKK has joined the steering committee and its formation, to integrate the various and complicated urban activities of transportation, commercials, and offices efficiently, and the variety of request by many stakeholders.
The introduction of new smart city technologies, such as smart energy, smart mobility (AGT and personal cars), and smart resilience, including the management are our range of consulting.



Keywords

☑TOD ☑ Smart City ☑Project Management ☑Program Management ☑Smart Energy ☑ Smart Mobility ☑Resilience

Contact Us

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Solar off-grid container

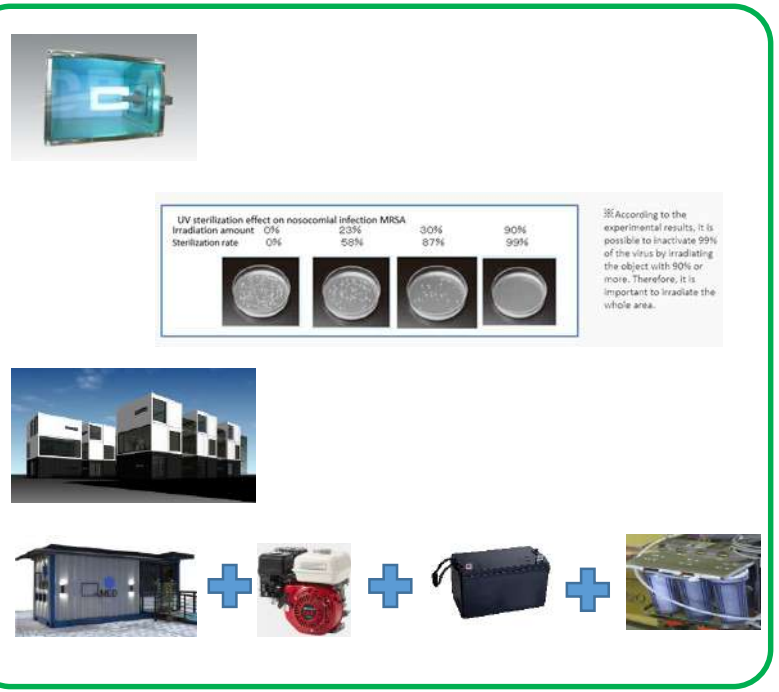
Overview

UV-C LAMP (Registered at the United Nations Industrial Development Organization)

- The UV-C254 system inactivates viruses and bacteria with a lamp that emits UV-C ultraviolet rays with a wavelength of 254nm.
- In a university research, 99.9% of corona virus was inactivated by UV-C in only 30 seconds after irradiation.
- UV-C:LED was used in the test. Our UV-C254 is about 150 times stronger than LED lamps and can instantly inactivate corona virus.
- Our company considers safety as the foremost priority. We establish, promote and thoroughly implement safety handling programs from construction to installation and maintenance.

OFF-GRID CONTAINER TOWN

- Marine containers and batteries are upcycled to reduce costs and to help protect the environment.
- Any customization within the container can be made depending on local needs.
- Container modules are flexible and can be transported anywhere worldwide using ships and trucks.
- Container modules are convenient and are installed easily.



Keywords ☑Disaster Prevention and Management

Contact Us MATSUZAWA KAWARATEN Inc.

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Smart city monitoring platform with Japanese earth observation satellite data and AI analysis algorithm

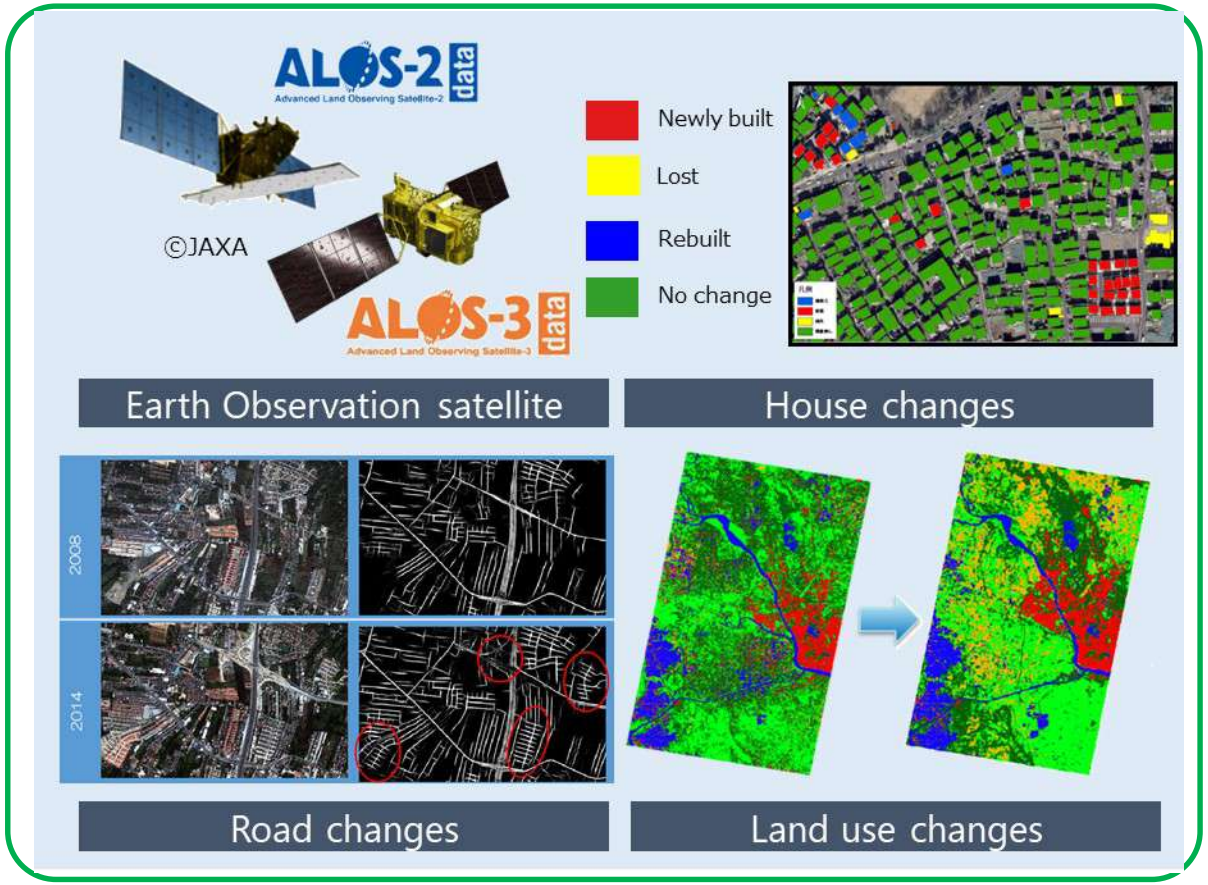
Overview

Support decision making, responding to the rapid changes, with sustainably updated ready-to-use geospatial information.

(1) Satellite imageries enables to periodically monitor the wide territory.

(2) AI technology enables to provide the result of satellite data analysis quickly.

【Use case】
Urban sprawl with unauthorized houses, and infrastructure demand, garbage problems. Subsidence, coastal erosion, peatland fires and flood, natural disasters.



Keywords

☑City monitoring ☑City planning
☑Big Data and AI ☑Remote Sensing ☑SDGs

Contact Us

PASCO Corporation

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② Maximizing the capacity of transportation and logistics infrastructure

Concept: Improving convenience for citizens and promoting industry through the provision of new mobility services such as MaaS, etc.

Issues of Urban Cities and Goals

《Issues》

- Developing a system to facilitate the smooth mobility of residents including the elderly and people with disabilities in particular who have difficulty traveling.
- Ensuring healthy life expectancy for residents.
- Revitalizing the local economy through increased human flow.
- Improving the attractiveness of cities.

《Goals》

- Improving the safety and convenience of residents' mobility. Improving the quality of life for vulnerable people in particular with limited transportation mobility by encouraging them to go out through increased opportunity to exercise and communicate.
- Easing congestion by making traffic more efficient.
- Creating sustainable cities where diverse generations live.
- Creating bustling cities.

Kasugai City's automated driving project.

A bustling scene in Sapporo City

Japan's Solutions

- Smart mobility.
  Developing car sharing and bicycle sharing.
  Providing on-demand last-one-mile mobility.
- Introduction of automated driving public transportation.
- Improving traffic accessibility using face authentication system (Providing seamless payment and services through face authentication system).
- Smart planning for urban development using data.
- Incentivizing residents to go out through the introduction of applications.
- Building a MaaS model that solves local issues by linking transportation methods with non-transportation services such as retail and tourism, etc. at destinations.

(Remarks)

- Over a period of 10 years, elderly people's physical strength and athletic performance were rejuvenated by the equivalent of 5 years through the exercise resulting from the increased walking opportunities.
- Increased residents' opportunities to go out. Opportunities for the elderly in particular to participate in social gatherings increased and the rate of care needs assessment decreased. A 30% reduction in the risk of developing dementia.

Sapporo City used big data (human flow data, health data, etc.) for its urban development.

Places visited for on-site inspection

- Sapporo City, Hokkaido
- Tsukuba City, Ibaraki Prefecture
- Kasugai City, Aichi Prefecture

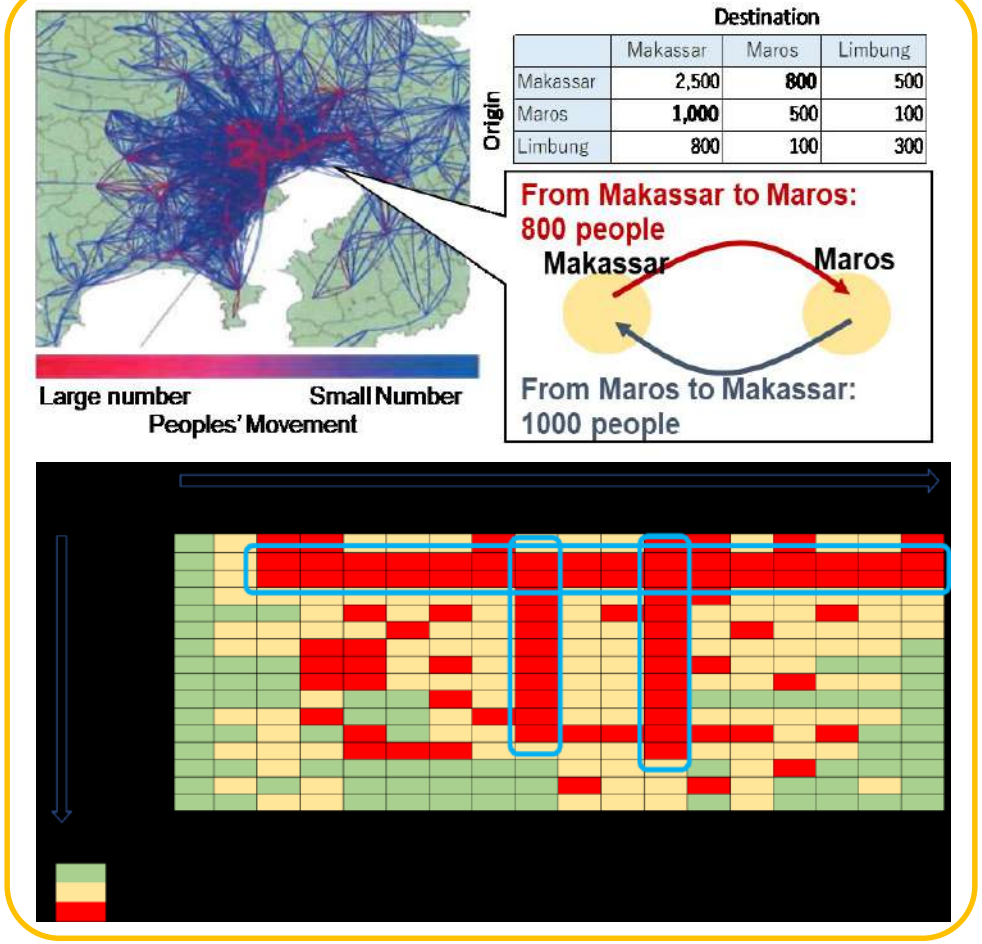
Participating companies and main operators

- Smart Wellness City Council (Sapporo)
- Tsukuba Smart City Council
- Kozoji Smart City Promotion Study Group (Kasugai City)

Consulting Services for the best solutions on transport systems

Overview

(Probe System: Traffic Analysis and Information Provision)
Data obtained from GPS probes is converted into running speed by road link to measure traffic congestion and required time. In addition to information provision to road users, traffic probe data is utilized for formulation of traffic policies. The characteristics of this analysis is to utilize Big-data for Dynamic information Provision and Road/Transport Measures.
(People's Movement Data Analysis)
This is a New Big Data Technology to know in Statistics 'When' and 'Who' (*Anonymized Data) moved from 'Where' to 'Where' for 24 hours 365 days by analyzing Mobile Carrier Data. The characteristics of this analysis is by analyzing long period and large number of samples, possible categorization (gender, age. Residential area), to reorganize the bus network. etc.



Keywords ☑Traffic Congestion Analysis ☑ITS ☑Project management

Contact Us Nippon Koei. Co., Ltd.

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Next Generation ERP

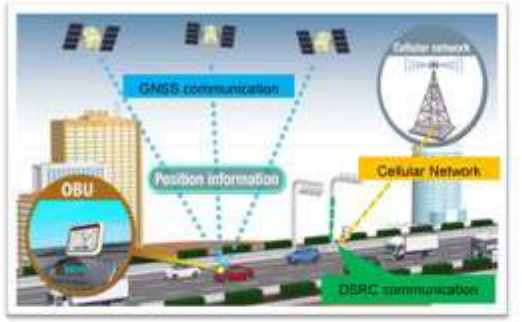
Overview

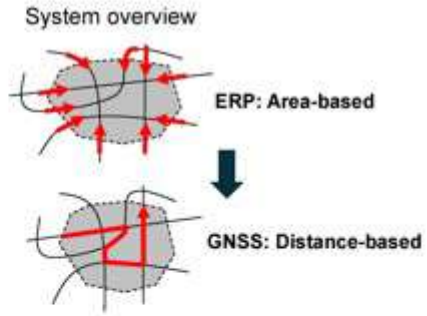
With global track records of ERP (Electronic Road Pricing) systems , MHIMS has plenty of experiences in providing solutions to traffic related challenges since 1960's to ensure the robust development of transportation infrastructure.

In 2014,Singapore government decided to launch upgraded system of ERP, called Next Generation ERP, which is the congestion charging system utilizing Global Navigation Satellite System.

With our rich experiences with technologies, we are proudly designated as a main contractor of the project, and currently developing the project.

In ASEAN, we would like to contribute to its development of transportation infrastructure through providing our ITS solution.





- World's first gantry-less tolling in urban area for all vehicles by utilizing global navigation technology and upgraded OBUs to identify each vehicle's location
- Big data platform for various usage available
- Technically capable services include
  (1) Real time traffic information dissemination
  (2) Navigation
  (3) Map matching
  (4) Smart parking
  (5) V2X service etc.

Next Generation ERP
Trial in 2012

Keywords ☑Traffic Congestion Analysis ☑Providing Traffic Congestion Information ☑Road Pricing

Contact Us Mitsubishi Heavy Industries Group

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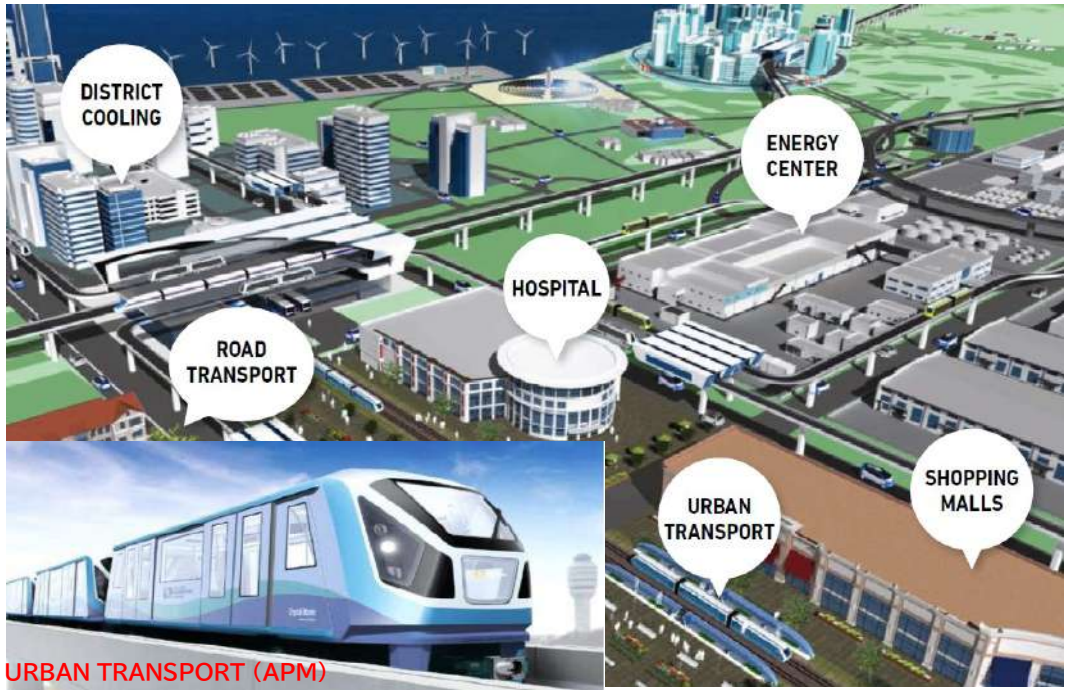
Smart Mobility: Integrated Mobility System

Overview

MHI Group can provide unmanned automated transportation system called APM (Automated People Mover).

We can propose an integrated service as a "transportation system" instead of selling a single device.
We can provide an all-in-one contract, including engineering, construction, commissioning, after-sales /O&M services.
In addition to above, we implement integrated and/or optimal system planning for smart mobility which consist of not only APM but also road transportation such as parking system, access control, road pricing and so on. With our consulted smart mobility services, you can improve the attractiveness and quality of life of your city.



URBAN TRANSPORT (APM)

Keywords ☑APM ☑Project management

Contact Us Mitsubishi Heavy Industries Group

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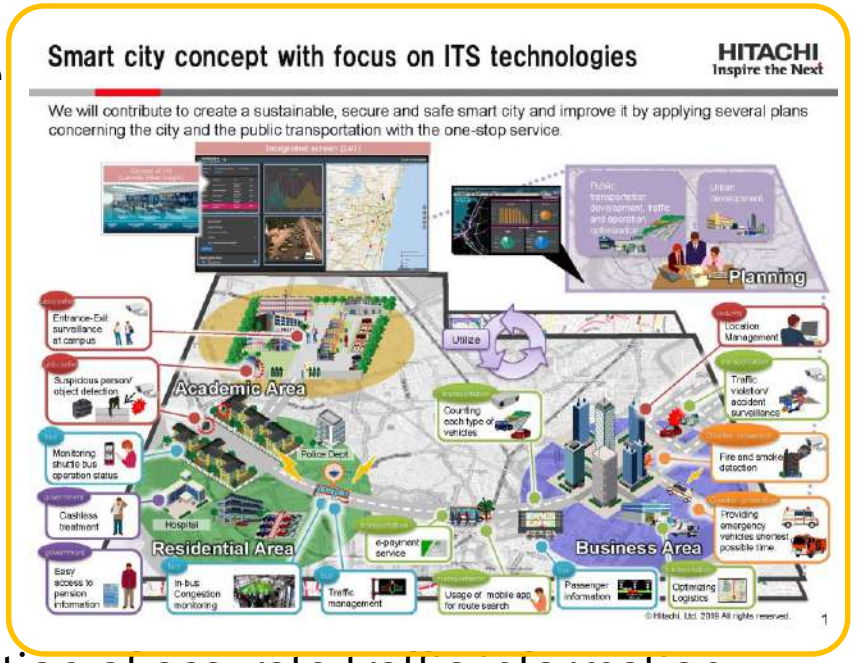
ITS Technology

Overview

We will contribute to create a sustainable, secure and safe smart city and improve it by applying several plans concerning the city and the public transportation with the one-stop service.

・Analysis by Acceleration sensor
→Analyzing changes in events using smartphone's acceleration sensor, GPS, etc.
→Detects overloaded vehicles by vehicle weight estimation
→Automatic identification of transportation mode from person trip information
・ITraffic information generation/In-bus crowd estimation
→Dynamic sensors (e.g. on-board GPS) enable the generation of accurate traffic information over a wide area
→Travel time provision on VMS
→Statistical analysis matrix generation
→Bus arrival time provision / transfer navigation
→Bus dispatch simulation



Keywords ☑Traffic Congestion Analysis ☑ITS ☑Transport and Logistic Data Platform

Contact Us PT.Hitachi Asia Indonesia

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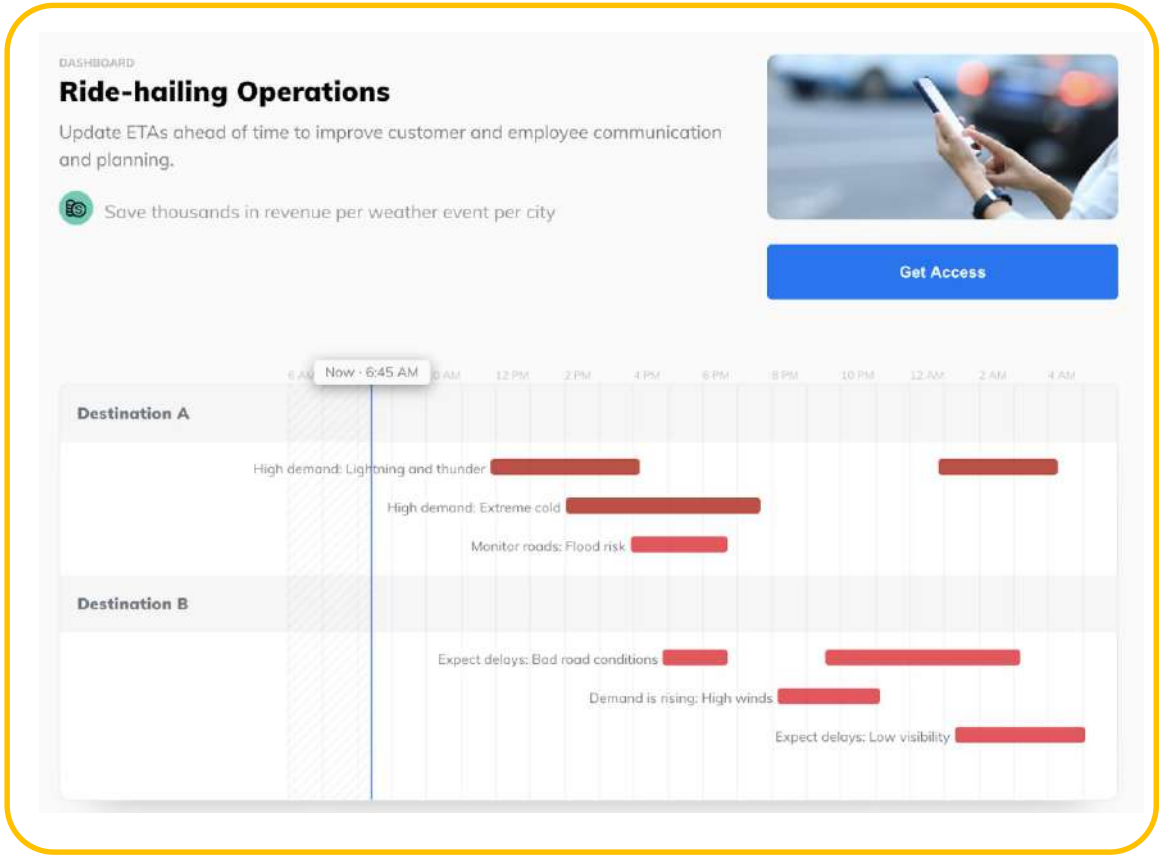
ClimaCell HyperCast

Overview

ClimaCell is the world's leading All-in-One Weather Intelligence Platform™.
Fully customizable to any industry impacted by the weather, customers around the world including Tata and Uber use ClimaCell to dramatically improve operational efficiency.
ClimaCell was built from the ground up to help teams predict the business impact of weather, streamline team communication and action plans, improve safety, and optimize revenue margins.
ClimaCell's difference is our weather intelligence engine, focusing on impact, and making decisions before it's too late.
ClimaCell is very appealing to Indonesia as it can support any vertical and is focussed on improving efficiency of all facets that makes us a smart city operations.



Keywords ☑Smart Weather News

Contact Us SB Energy Corp.

Web https://www.sbenergy.co.jp/en/business/newfocus/

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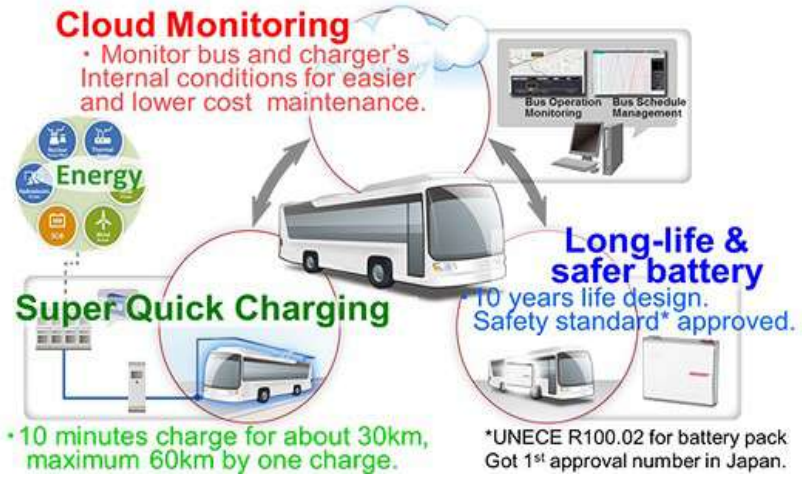
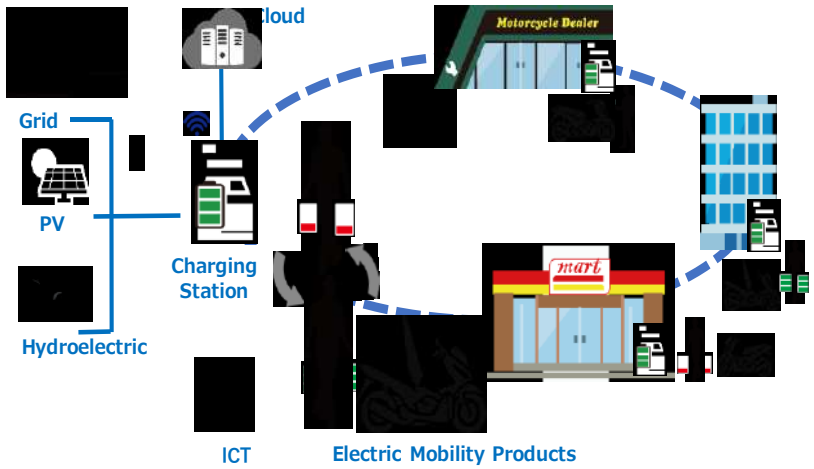
Increase energy efficiency and improve air quality, with more EVs

Overview

We verify the effectiveness of the leading technologies and practical operability regarding EV through demonstration projects in Asia.
<Malaysia>
Large EV buses drive 30 km only 10 minutes super quick charging.
<Indonesia>
EV users share batteries, exchanging detachable battery for a full-charged battery at a battery charging station



Malaysia EV bus project



Indonesia battery sharing project

Keywords ☑EV ☑Smart Community ☑Project Management

Contact Us NEDO Smart Community Department

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Email smartcommunity@ml.nedo.go.jp

WILLER smart city mobility solution with MaaS

Overview

WILLER is a marketing and technology solution company that brings innovation into transportation. WILLER aims to use technology to solve social issues such as traffic jam, accidents, and environmental pollution.

1. Community Mobility Service (On-demand shared mobility service)

Willer's Community Mobility Service is centred on the Mobility-as-a-Service (MaaS) concept to provide an integrated demand-responsive and flexible shared mobility services utilising AI to increase connectivity and accessibility within the community.

It is an efficient and effective way to solve first- and last-mile travel and fulfil people's needs and desires for an enhanced travel experience.

2. Autonomous Vehicle Solution

Autonomous vehicles are an innovation that will transform our mobility structure. WILLER provides an autonomous operating and management solution for commercial bases.

3. Transport Data Analysis

WILLER makes use of IoT and the MaaS app to collect data to gather insights on users' travel behaviours and patterns so as to better understand and meet the desires of the users and to allow for new creative services to be created to fill the gap.

Keywords ☑MaaS ☑On-demand shared mobility ☑Autonomous vehicle management

Contact Us WILLER, INC.

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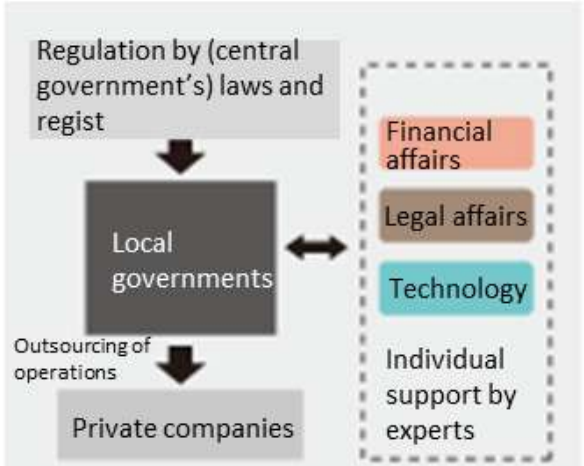
Project Management of PPP with the spirit of Sanpo - Yoshi (Three-way satisfaction)

Overview

As a pioneer of project management in the construction industry in Japan, we are promoting projects in different areas, ranging from offices, production facilities, to public facilities such as hospitals and schools. We also work closely with our clients in different phases, from strategic planning at an early phase to optimization of facility management at an O&M phase.

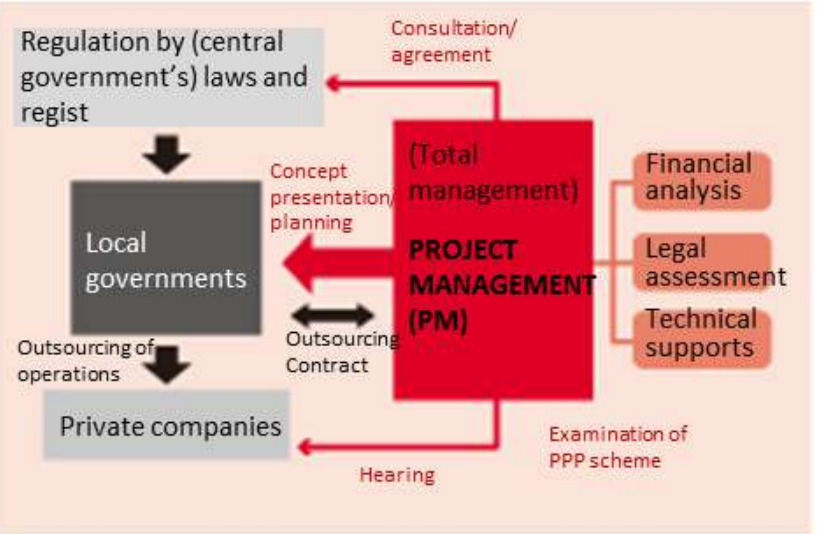
We have engaged with a very wide variety of projects in PPP (Public-Private-Partnership) and regional revitalization: our projects include Japan's first toll road concession, establishment of the community-based integrated care system etc., with a total sales of 1.5 trillion JPY both in Japan and overseas.

Example of general support services



Sometimes research service for a project delegated by a client may become ends without forming the project.

Index's support services for governments



PM coordinates a project from the project planning to its operation, and has a discussion or builds consensus on the system design based on private entities feedbacks or the revision of legal system to realize the concept.

Keywords ☑Project Management ☑Public Private Partnership (PPP)

Contact Us

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③ Efficient use of energy and realizing energy conservation and zero emissions

Concept: Encouraging the efficient use of energy and reducing greenhouse gas emissions. Also improving the resilience of urban cities.

Issues of Urban Cities and Goals

《Issues》

- Efficient use of energy.
- Developing urban infrastructure which is less dependent on utilities companies.
- Increasing greenhouse gas emissions.
- Stable use of renewable energy.
- Strengthening resilience at the time of disaster including securing energy in the event of a large-scale disaster.
- Treatment and utilization of livestock manure generated by the livestock industry.

《Goals》

- Reducing CO2 emissions.
- Reducing greenhouse gas (GHG) emissions.
- Smart energy management.
- Realizing local production and local consumption of renewable energy.
- Industrializing local resources (example: establishing a hydrogen supply system).
- Strengthening the resilience of urban cities.

Japan's Solutions

- Local production and local consumption of energy with a focus on renewable energy.
- Industrialization of local resources, Shikaoi Town and Obihiro City (hydrogen, which does not generate CO2, is produced from biogas obtained from livestock manure and used for fuel cell vehicles, aquaculture, etc.).
- Establishing autonomous distributed energy system.
- Dispersing electricity peaks according to demand response by using Community Energy Management System (CEMS).
- Establishing a locally produced and locally consumed energy system that utilizes CEMS, Home Energy Management System (HEMS), Building Energy Management System (BEMS), Electric Vehicle (EV), etc.
- Standardization of smart homes equipped with solar power generation system and storage battery unit.

(Remarks)

- The town of Shikaoi has been demonstrating GHG reduction through the use of livestock manure and hydrogen.
- Securing power at the time of a large-scale disaster. Establishing a disaster prevention base and maintaining hygiene in the event of a disaster.
- Another demonstration test confirmed a reduction of 9,000 tons of CO2 emissions.

Places visited for on-site inspection

- Mutsuzawa Town, Chiba Prefecture
- Fujisawa City, Yokohama City, Kanagawa Prefecture
- Shikaoi Town, Kato-gun, Obihiro City, Hokkaido

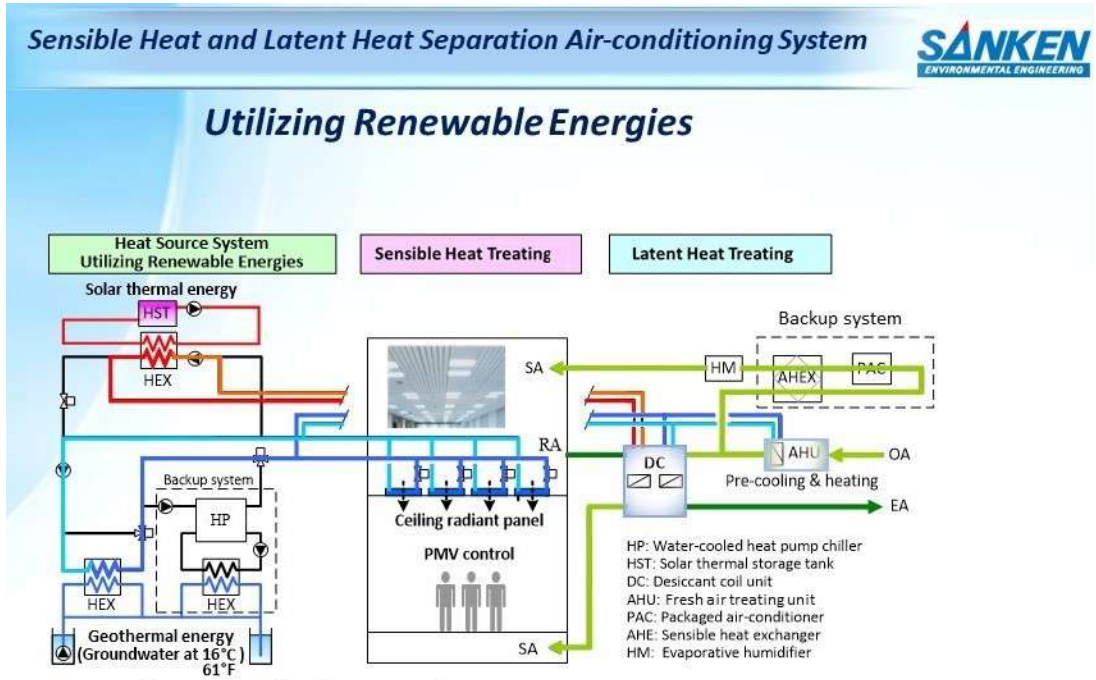
Participating companies and main operators

- Mutsuzawa Town, Chiba Prefecture
- Fujisawa Sustainable Smart Town (SST) and Tsunashima SST
- Shikaoi Town, Kato-gun, Obihiro City, Hokkaido

Energy-saving technology toward Zero Energy Building (ZEB)

Overview

SAKEN is the first company in Japan to renovate an existing building into a ZEB(Zero energy building) using its own technology.
We are ZEB's engineering expert, ensuring of maximizing energy saving, thermal comfort and quality for your projects starting at the design stage until commissioning.
Especially for air conditioning systems that consume a large amount of energy, we use decoupled latent heat and sensible heat air-conditioning technology and various simulation technologies to provide a system that minimizes energy consumption of the building.
SANKEN guides you through the engineering toward ZEB in Southeast Asia.



Main heat source for the air-conditioning system
Cooling: Direct utilization of geo-thermal energy and solar thermal energy
(Solar thermal energy for regeneration process of desiccant coil unit)

Keywords ☑Renewable Energ ☑ZEB・ZEH ☑WELL/LEED

Contact Us SANKEN SETSUBI KOGYO CO., LTD.

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Smart House ・ Smart City

Overview

Daiwa House has conceived of a new concept for homes for the future that is designed to increase both peace of mind and comfort. This concept is based on a community connected by a network that can create and use the energy needed for everyday life, otherwise known as living in a "city." Technology has evolved to the point where it is possible to live in a sustainable home with a small environmental impact. We are expanding the stage of living from the "home" to the "city."
Smart house is「Make・Storage・Use well」necessary energy every day,
and We consider the richness throughout the「Smart city」
We are engaged in the development of environmentally friendly houses and cities.
We are promoting zero-energy houses (ZEH) by combining photovoltaic power generation, lithium-ion batteries, and our own HEMS.

Keywords ☑Renewable Energ ☑ZEB・ZEH ☑Energy Management

Contact Us Daiwa House

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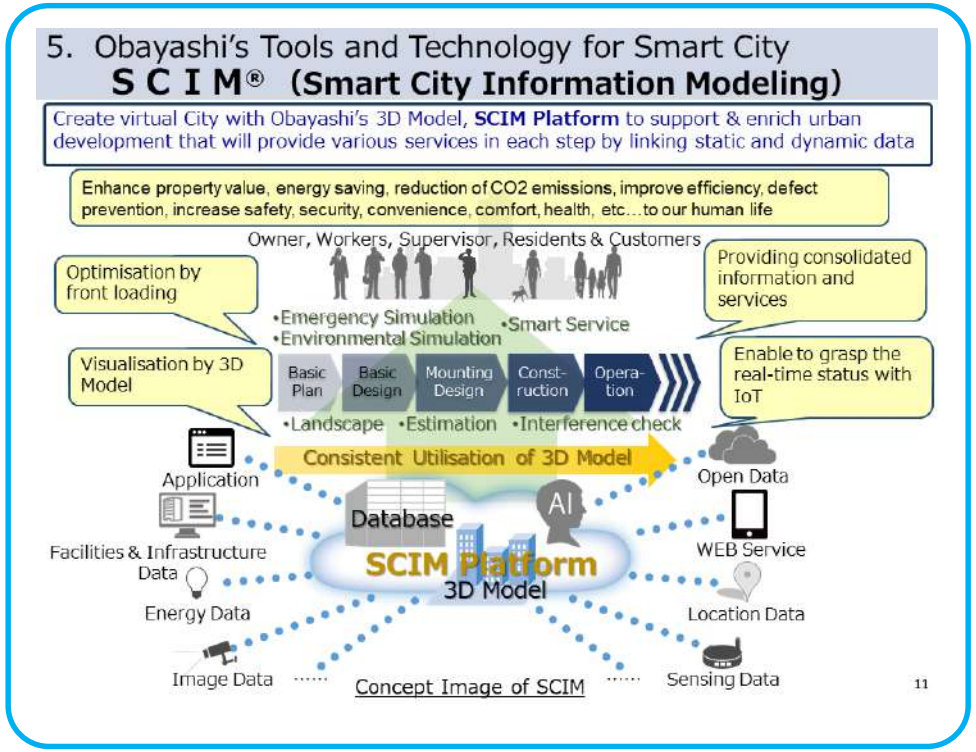
SCIM (Smart City Information Modeling)

Overview

COMPREHENSIVE PLATFORM FOR URBAN RENEWAL COORDINATION BY UTILIZING 3D SYSTEM

- Duplicating a whole town by 3D model based on BIM data of buildings
- Constructing "Digital-Twin" of a town by associating various statistic and dynamic data
- Achieving smart services of various fields※ (※ energy saving, mobility, safety/security, amenity/wellness, hospitality and etc.)
- Posibility of utilizing "SCIM"at each step of urban development(plan, construction and operation)
- CHARACTARISTIC
  1.Easy understanding by 3D model
  2.Cooperation with sensing data and IoT
  3.Optimization by front loading
  4.Circulation of PDCA in short span
- APPEAL to ASEAN COUNTRIES



- Unified management of urban development by platform
- Achievement of harmony between dvelopment and environment
- Enhancement of reduction of CO2 emissions and local production for local consumption

Keywords ☑3D / BIM ☑Energy Management ☑Smart Infrastructure Maintenance

Contact Us Obayashi Corporation

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Waste-to-Energy (WtE) solution with ICT technology

Overview

Our Waste-to-Energy (WtE) solution, Engineering, Procurement and Supervision Services considered long-term Operation and Maintenance with ICT technology which is remote monitoring and operational support services by experienced operators realizes stable plant operation and high-efficient energy recovery in long-term plant operation.
There is high possibility that traditional WtE plant without our proposed solution leads unstable operation and lower energy recovery because its plant operation depends on site operators' skill and experience.
There is not much operating WtE plant and experience local operators in Southeast Asian Countries. We believe our proposed solution makes successful WtE business in Southeast Asian Countries.

Keywords ☑Renewable Energy ☑Remote Monitoring ☑Energy Management

Contact Us

Hitachi Zosen Corporation

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One stop solution for Waste-to-Energy

Overview

We provide the best optimum solution among our conventional and state-of-the art technologies for Waste-to-Energy (WtE) such as stoker, gasification and biomass utilization to generate energy output from varying type of waste streams.

We carry out major equipment delivery, Engineering, Procurement and Construction (EPC) works as well as Operation and Maintenance (O&M) works relying upon our strong and extensive track record of delivering over 300 waste treatment plants of various sizes in Japan, Singapore and the other countries over the world.

In ASEAN, we would like to contribute to its development of environmental infrastructure through providing our solution for WtE.

Keywords ☑Energy Reuse ☑Energy Management

Contact Us Mitsubishi Heavy Industries Group

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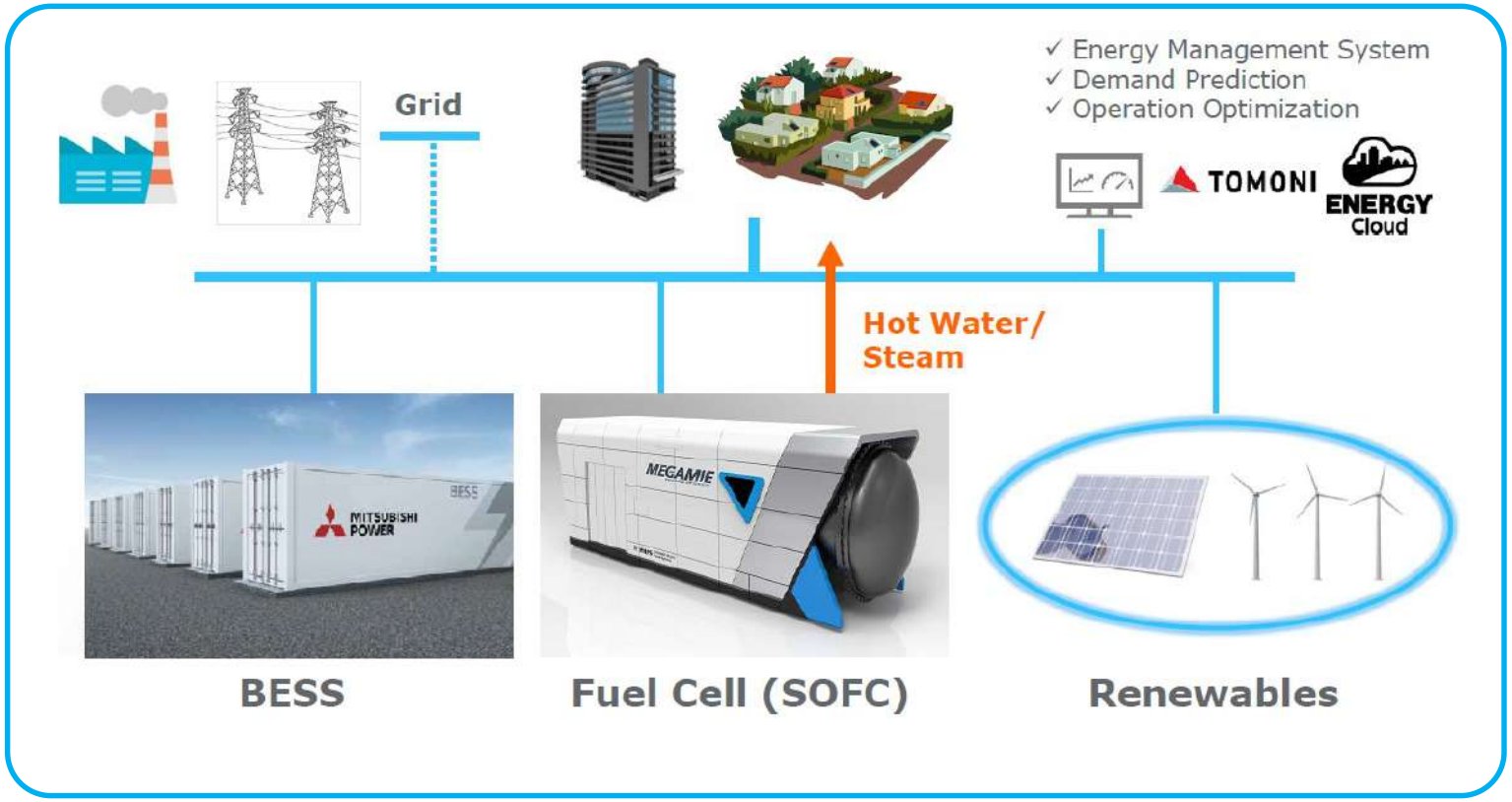
Micro Grid Solution for ASEAN

Overview

Micro Grid has recently attracted attention as an energy and electricity supply system to local communities. Micro Grid includes potential problem of grid instability and influences from fluctuations of renewable energy and demand. Mitsubishi Power, Ltd. provides appropriate solutions for these challenges by not only equipment supply such as SOFC, BESS etc., but core technologies of ICT and grid stabilization.



Keywords ☑Renewable Energ ☑Smart Grids / Micro Grids ☑Energy Management

Contact Us Mitsubishi Heavy Industries Group

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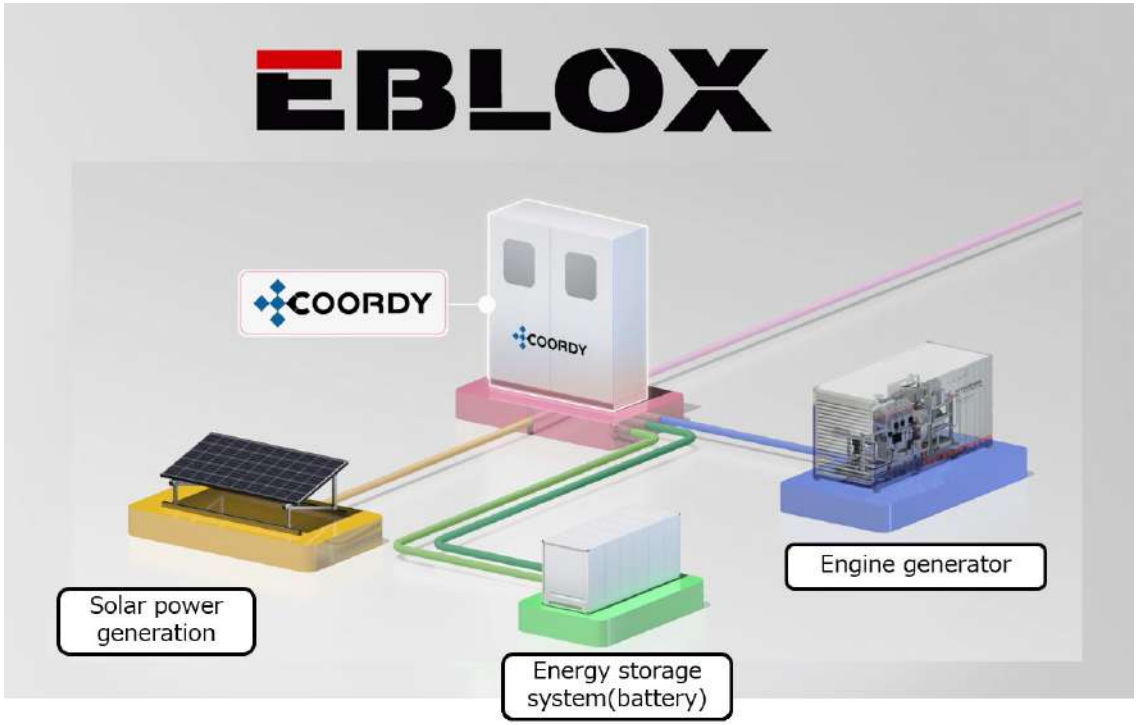
Triple hybrid stand–alone power generation system

Overview

MHI Group developed a triple hybrid power generation system called “EBLOX” and constructed a demonstration facility on the premises of the Sagamihara Machinery Works in our Group company.

EBLOX is a combined power generation system that can use renewable energy sources such as solar power and is equipped with an energy storage system (ESS) and engine generator.
We are promoting the use of EBLOX in off-grid areas where diesel engine generators are still the primary power generation system.
EBLOX makes the most of renewable energy and results in a substantial reduction in carbon emissions.



Keywords

☑Renewable Energy ☑Smart Grids / Micro Grids ☑Energy Management

Contact Us

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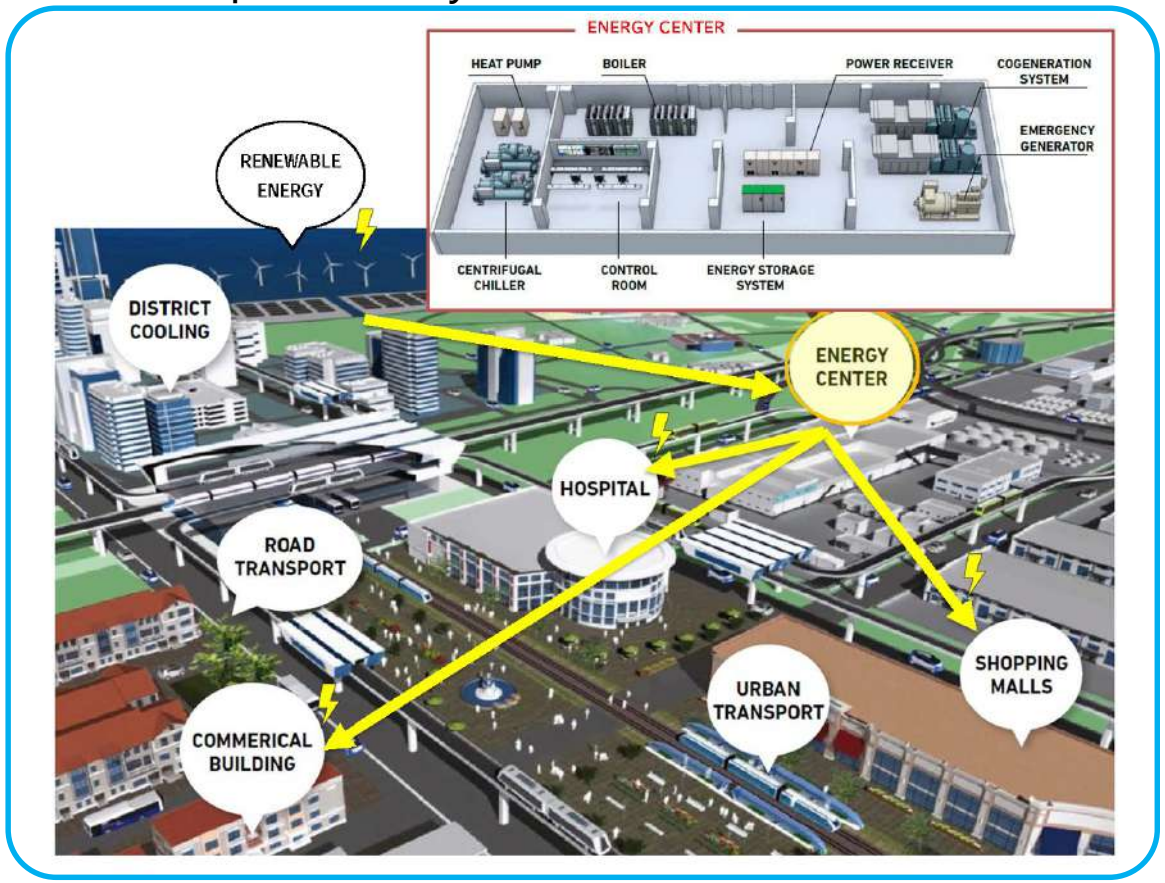
Email hideo_kashiwagi@mhiet.mhi.co.jp

Smart Energy: Integrated Energy Supply and District Cooling System

Overview

Reducing our carbon footprint is one of the most important keywords to materialize a sustainable society.

MHI Group implement optimal system proposals for "Energy Center" and/or "District Cooling" which mainly consist with district cooling system, control system, cogeneration system, renewable energy, emergency power system and so on as may be beneficial.
With proposing optimal energy system with our technical expertise and experience, we are really keen to contribute to eco-friendly cities, reducing energy consumption and greenhouse gas emissions.
They should be tailored to serve each client's unique requirements.



Keywords ☑Smart Infrastructure Maintenance ☑Energy Management

Contact Us Mitsubishi Heavy Industries Group

Web https://www.mhi.com/group/mhieng/

Email aya_maezawa@mhieng.mhi.co.jp

Dye-sensitized solar cell - Power Foyle by Exeger

Overview

Exeger is a Swedish deep tech company manufacturing Power Foyle, a light harvesting material that can power any electronic device using ambient light.
Power Foyle can be modified according to customer specification and be printed in different shapes, forms and textures.
The Power Foyle material is flexible, durable and reliable and can be integrated in for example headphones or any consumer device.
The JBL Reflect Eternal headphone will be the first product on the market using Power Foyle.

Keywords ☑Renewable Energy

Contact Us SB Energy Corp.

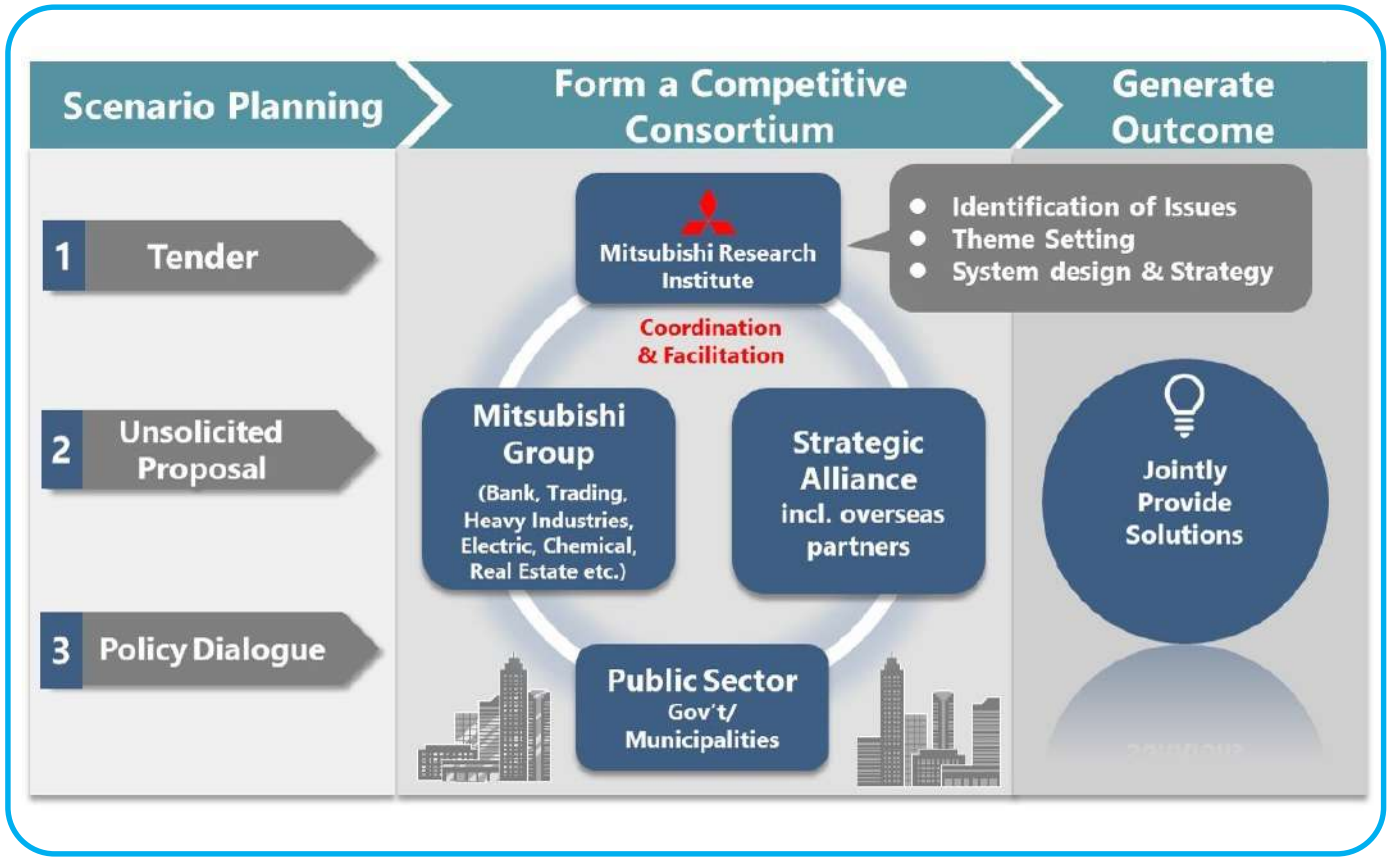
Web https://www.sbenergy.co.jp/en/business/newfocus/

Email exeger_executive_sales@sbenergy.co.jp

Complete support for activities tailored to meet the unique needs of Japanese corporations

Overview

Over the years of cooperation with the Japanese government and businesses, MRI has developed extensive knowledge in areas such as the environment and energy, food and agriculture, infrastructure, and healthcare.
By leveraging this expertise and network of Japanese companies with technical capabilities, we are helping to solve social issues in ASEAN countries.
MRI serves as a hub for activities in collaboration with diverse stakeholders, such as smart cities, and provides research and consulting services for social implementation.



Keywords ☑Low Carbon Societ ☑Resilience

Contact Us Mitsubishi Research Institute, Inc

Web https://www.mri.co.jp/en/capabilities/index.html

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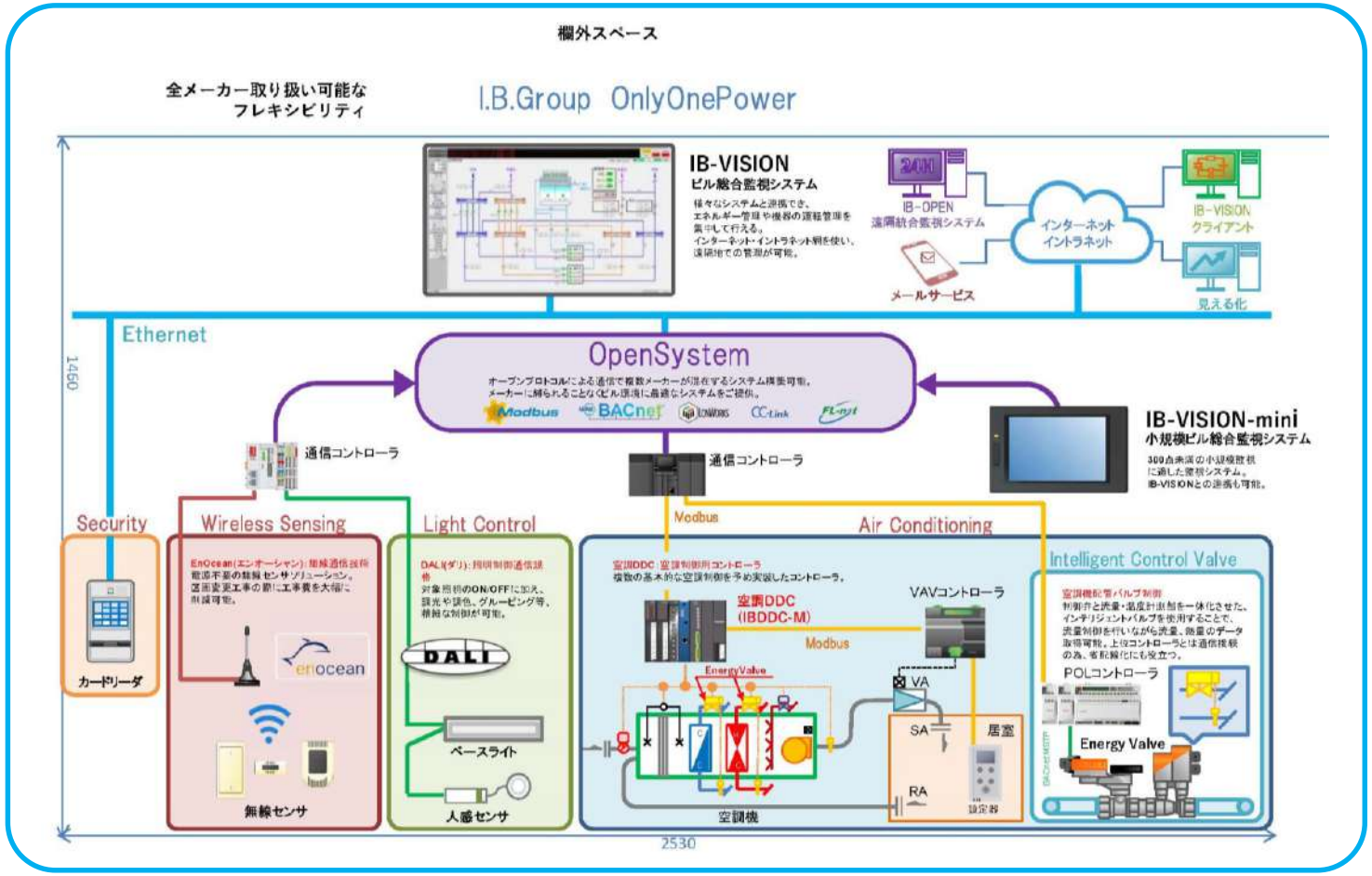
Open System（IB-VISION）

Overview

IB-VISION assists you to construct an open system, enabling you to establish communications to monitor and control various devices regardless of vendors.



Keywords ☑Transport and Logistic Data Platform☑Energy Managemen☑Smart Infrastructure Maintenance

Contact Us IB Technos Co., Ltd.

Web https://www.ibtechnos.co.jp/

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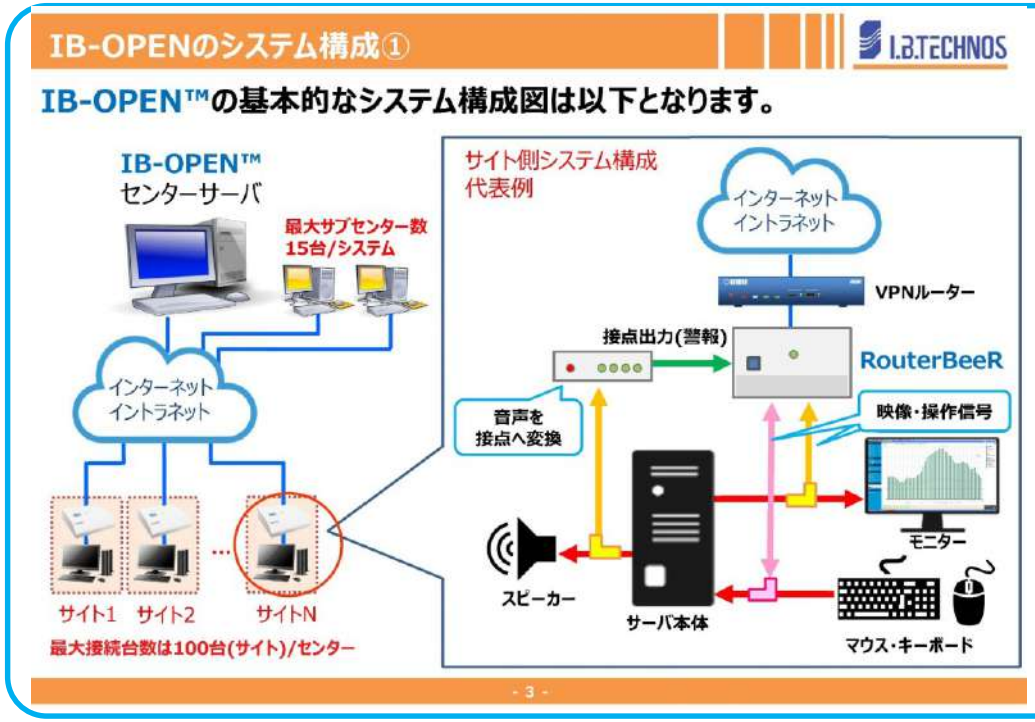
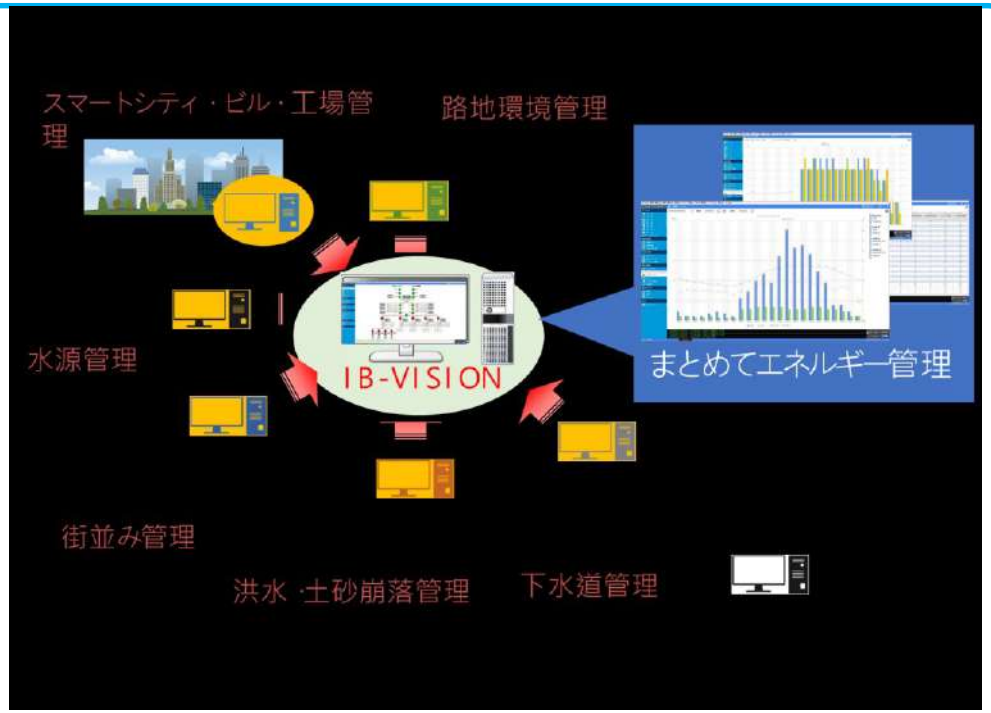
Open System (IB-OPEN)

Overview

IB-OPEN is a wide area monitoring system which allows you to remotely monitor / operate your existing monitoring systems regardless of vendors. It is effective in centralizing the control and in saving manpower.





Keywords ☑Remote Sensing ☑Remote Processing ☑Remote Monitoring

Contact Us IB Technos Co., Ltd.

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Intelligent BMS for Smart Area Management

Overview

Azbil aims to transform Technology-Driven Smart Cities to Human-Centric Smart Society with comprehensive and interlinked solutions to improve people's quality of life.
The Intelligent Building Management System (IBMS)
platform integrates systems in workplaces and enhances them to be more customized and personalized.
Multiple sub-systems of building services can also be integrated into the platform for seamless communication and data collection, to allow sophisticated controls which translates to better customer experience within buildings.
In addition, Azbil's IBMS platform has the capability to manage multiple buildings simultaneously, utilizing information from each building to benefit the city as a whole.

Keywords

☑Green Building ☑Energy Management
☑Remote Monitoring

Contact Us

Azbil Corporation

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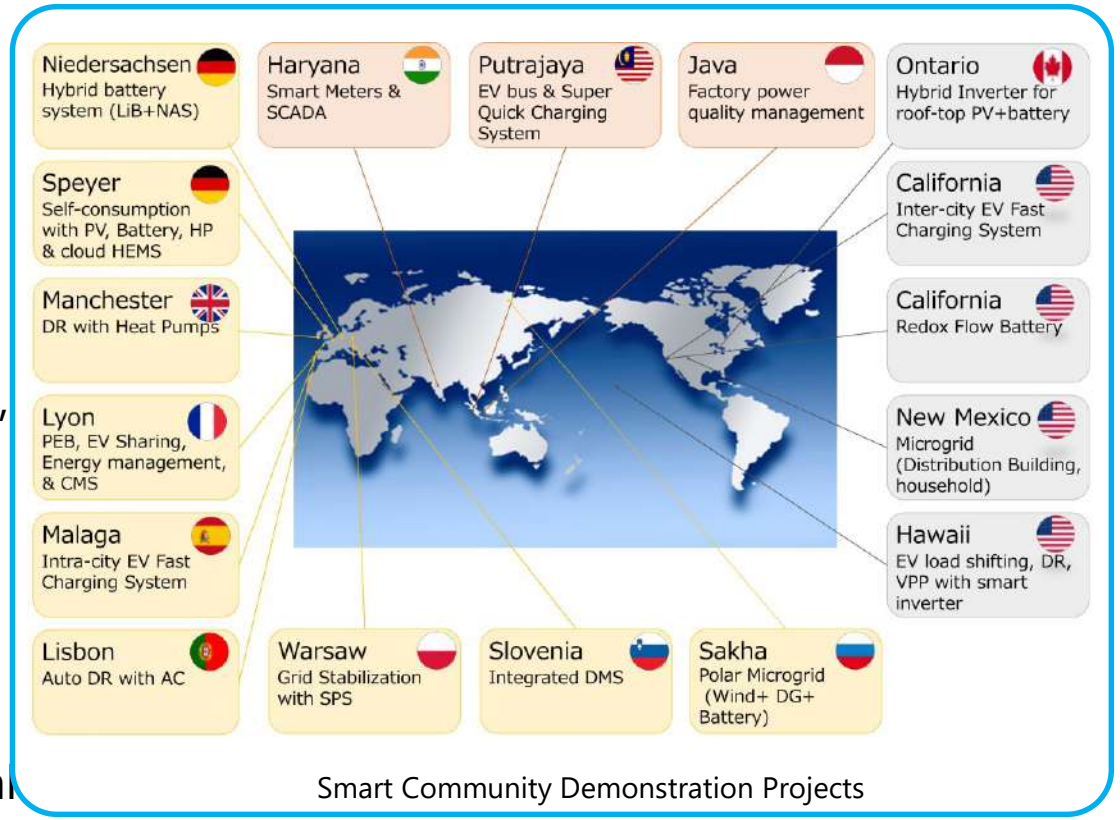
Smart Community ／ Deploying smart systems through our international demonstration project

Overview

NEDO is Japan's public research and development management agency, addressing energy and global problems and enhancing industrial technology.
NEDO coordinates and integrates the technological capabilities and research abilities of industry, academia, and government. It also promotes the development of innovative and high-risk technologies. Through these activities, contributing resolution of social issues and market creation by demonstrating and producing practical applications of such technologies.
Since 2010s, NEDO has conducted various international demonstration projects such as microgrid, large-scale storage battery systems and E-mobilities, establishing globally beneficial technology as well as addressing global energy and environmental problems.



Smart Community Demonstration Projects

Keywords ☑Project Management ☑Energy Management ☑Smart Community ☑EV

Contact Us NEDO Smart Community Department

Web https://www.nedo.go.jp/english/index.html

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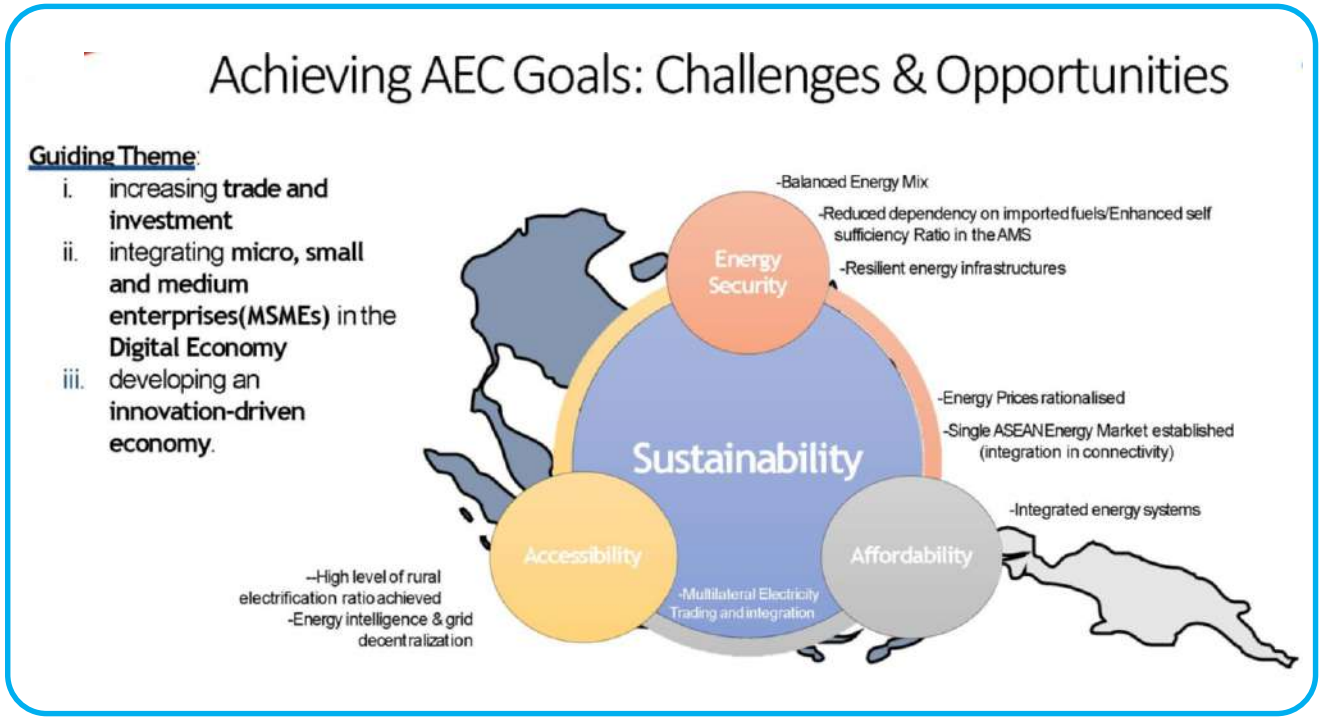
Japan Smart Community Alliance

Overview

The Japan Smart Community Alliance aims to promote public-private cooperative activities toward the realization of a smart community by tackling common issues such as dissemination, deployment, and research on Smart Grid standardization. JSCA was formed 2010 and has 250 members.

JSCA Southeast Asia Study Group
Southeast Asia Study Group conducts surveys on the development status to promote the use of renewable energy and identify business opportunities for Japanese companies.
(For Example: Smart grids and the expectations of introducing VPP technologies in Southeast Asia)
The SG regularly exchanges opinions with ASEAN Centre for Energy (ACE) on the potential for smart community technology implementation in the region.



Keywords

☑Smart Community ☑Smart Grids ☑Renewable Energy

Contact Us

JSCA Secretariat

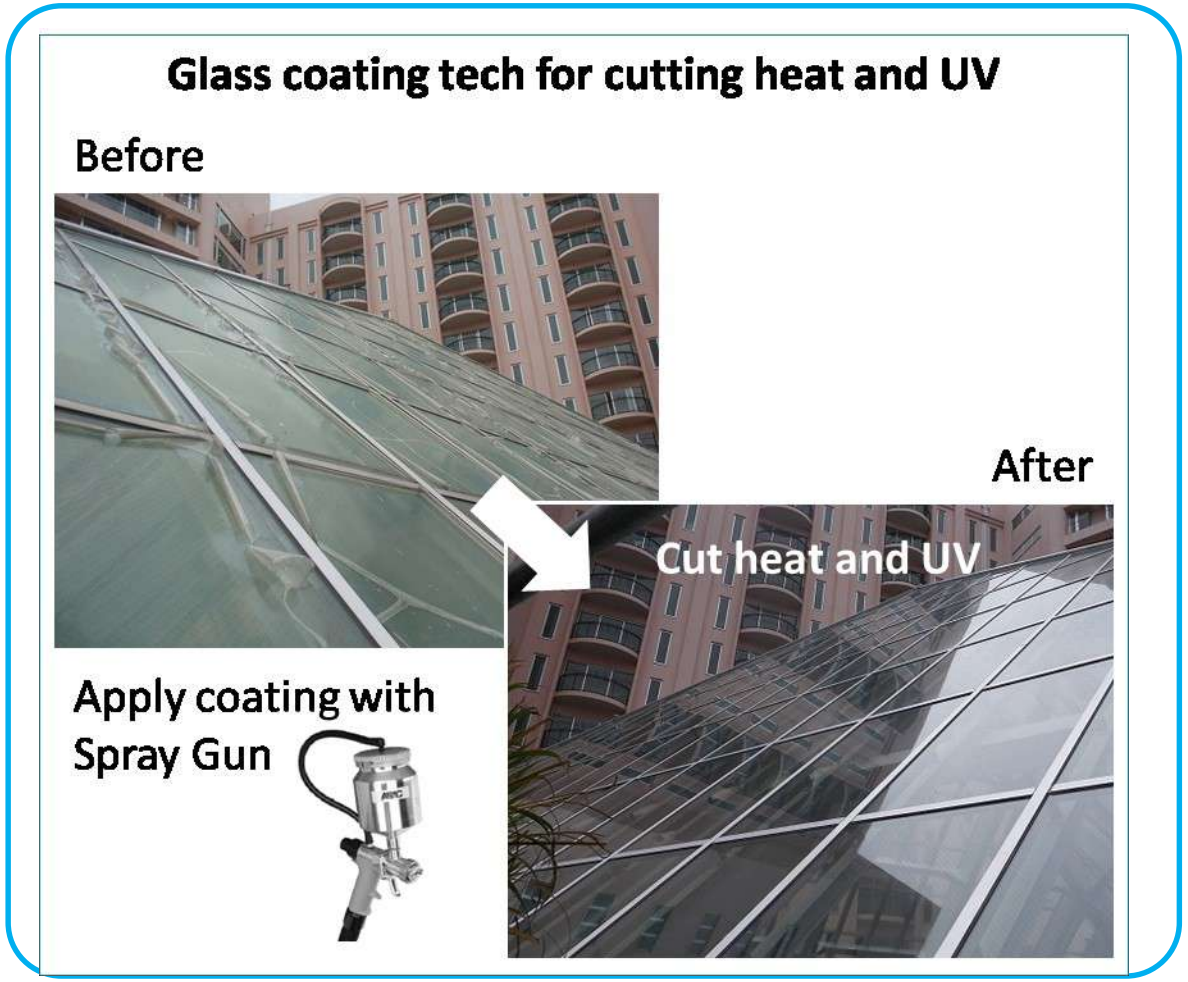
Web https://www.smart-japan.org/english/index.html

Email smart-japan@nedo.go.jp

Glass coating technology for cutting heat and UV

Overview

The FUMIN coating is a patented technology that forms an even clear film of conductive metal oxide on a glass surface by a spray gun.
This film absorbs and shuts off infrared ray and UV ray.
In hot summer, it prevents the room temperature from rising because it absorbs and shuts off infrared ray (solar heat) from outside.
In the case at Japanese national museum, the electricity cost for AC was reduced and it was able to recoup the application cost only in 3 and a half years.



Keywords ☑Electricity Saving ☑Heat Cut ☑UV Cut

Contact Us FUMIN Co., Ltd

Web https://www.fumin.jp/

Email k-yagisawa@fumin.jp

④ Realizing the world's best recycling society

Concept: Urban development in harmony with the environment that promotes resource recycling. Realizing a recycling society.

Issues of Urban Cities and Goals

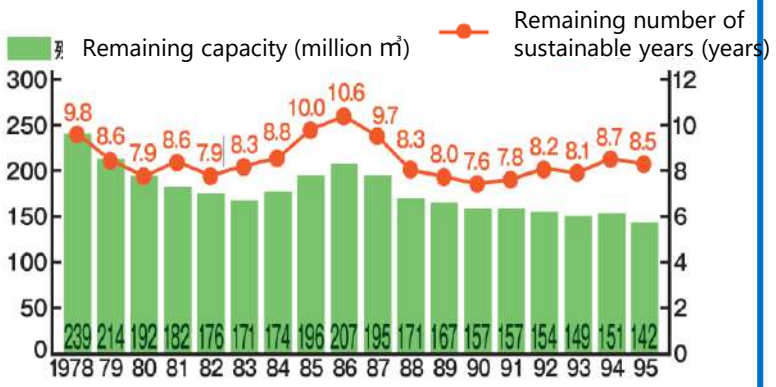
《Issues》

An increase in waste generation due to urbanization, industrialization and increased consumption.

- Tightening of the remaining capacity of final disposal sites.
- Diversification and increase in the types of waste, including large-size home electrical appliances that are difficult to properly dispose of, and increased use of containers and packaging.
- High concentration of companies and environmental technologies in industrial zones.

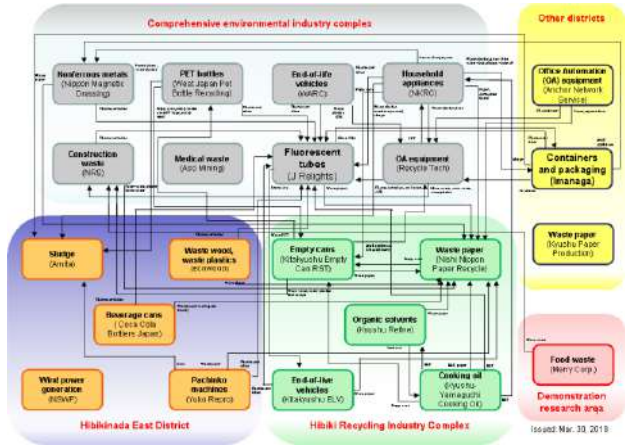
《Goals》

- Building resource-recycling communities through the "Eco-Town Project."
  - Centralized development of recycling facilities in specific areas.
    Development of various recycling laws at the national level.
    High-level mutual use of waste within region.
    Building a system and realizing zero-emissions.



Remaining capacity and remaining number of sustainable years of the final disposal sites (general waste)

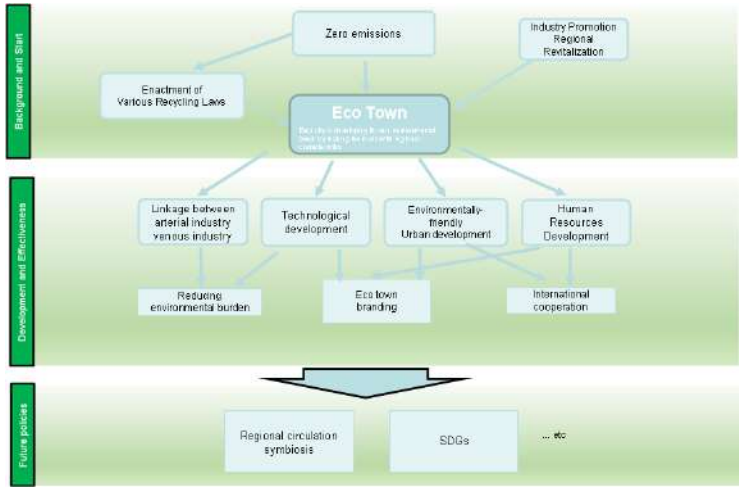
Source) Ministry of the Environment
"History and Current State of Waste Management in Japan" (February 2014)



Voluntary mutual resource recycling among companies in an eco-town.

Japan's Solutions

- Significantly reducing environmental burden by reducing the amount of final disposal and the proper disposal of toxic substances.
- The development of arteriovenous collaboration through the expansion of arterial companies into the venous industry and the development of recycling.
- Progress in technological demonstration of E-Waste through centralized processing at regional level.
- Progress in human resource development for environmentally friendly industries in a region and developing it into international cooperation.
- Contributing to the decarbonization of region and realizing the SDGs through recycling and reduced energy use.



Places visited for on-site inspection

- Kitakyushu City in Fukuoka Prefecture

Biomass Recycle for Palm Industries

Overview

We provide the appropriate solutions among our unique process and control method which can convert various biomass to value material in palm oil industries.

We propose suitable process and business model depend on customer's circumstances and/or purpose of use in order to realize both sustainable and economical carbon recycle supply-chain in the palm oil industries of ASEAN.

Keywords

☑Renewable Energy

Contact Us

Mitsubishi Heavy Industries Group

Web https://power.mhi.com/jp

Email satoshi_wakui@mhi.co.jp; yukihisa_taniguchi.se@mhi.com

"Foundation of Life"

Overview

JFE Engineering hopes to bring prosperity and comfortable lives through our products and services.

In order to effectively develop and operate infrastructures that support daily life, it is essential for us to cooperate with countries and regions all around the globe, as well as the diverse values and expertise offered by the individuals and companies who work with us.
Products & Services ; Recycling, Power generation & electricity, Waste management plants, Water & Sewerage, Pipelines, Energy plants, Bridges & steel structures, Industrial machinery, etc.

Nerima waste incineration plant (Tokyo) : community friendly design

Keywords ☑Renewable Energy ☑Energy Reuse ☑Resilience

Contact Us JFE Engineering Corporation

Web https://www.jfe-eng.co.jp/en/

Email takahashi-gen@jfe-eng.co.jp

⑤ Infectious disease control and public health that will set a new world standard

Concept: Improving public health through infrastructure development and preventing the spread of infectious diseases through remote and touchless technology.

Issues of Urban Cities and Goals

《Issues》

- Improving public health, thereby reducing and eliminating diseases and infectious diseases.
- Preventing the elderly, pregnant women and nursing mothers, and children, etc., in particular from physically contacting with an unspecified number of people at the time of an outbreak of an infectious disease.

《Goals》

- Appropriate treatment of wastewater through the development of basic urban infrastructure including sewage systems and decentralized wastewater treatment system "Johkasou."
- Appropriate waste management through basic urban infrastructure development.
- Ensuring the health of vulnerable residents, particularly the elderly, pregnant women and nursing mothers, and children, etc., at the time of an infectious disease outbreak.

Japan's Solutions

- Urban development with basic urban infrastructure including sewerage and decentralized wastewater treatment system "Johkasou," etc.
- Appropriate waste management through implementing Waste to Energy facility.
- Cutting-edge contactless technology such as touchless and automatic devices.
- A telemedicine system that utilizes mobile and cloud technologies. Through the system, the psychological, physical and economic burdens associated with going to hospital are reduced.

(Remarks)

- Decentralized wastewater treatment system "Johkasou" can treat sewage water to the same level as a collective sewage treatment plant (Biochemical Oxygen Demand (BOD) 20 mg/L or less, removal rate of 90% or more).
- The volume of waste can be reduced by almost one-tenth by Waste to Energy process.

Mobile measurement and monitoring devices can be used to grasp the health status of mothers and children.

Places visited for on-site inspection

- Hokkaido University Hospital
- Nazetokushukai Hospital

Participating companies and main operators

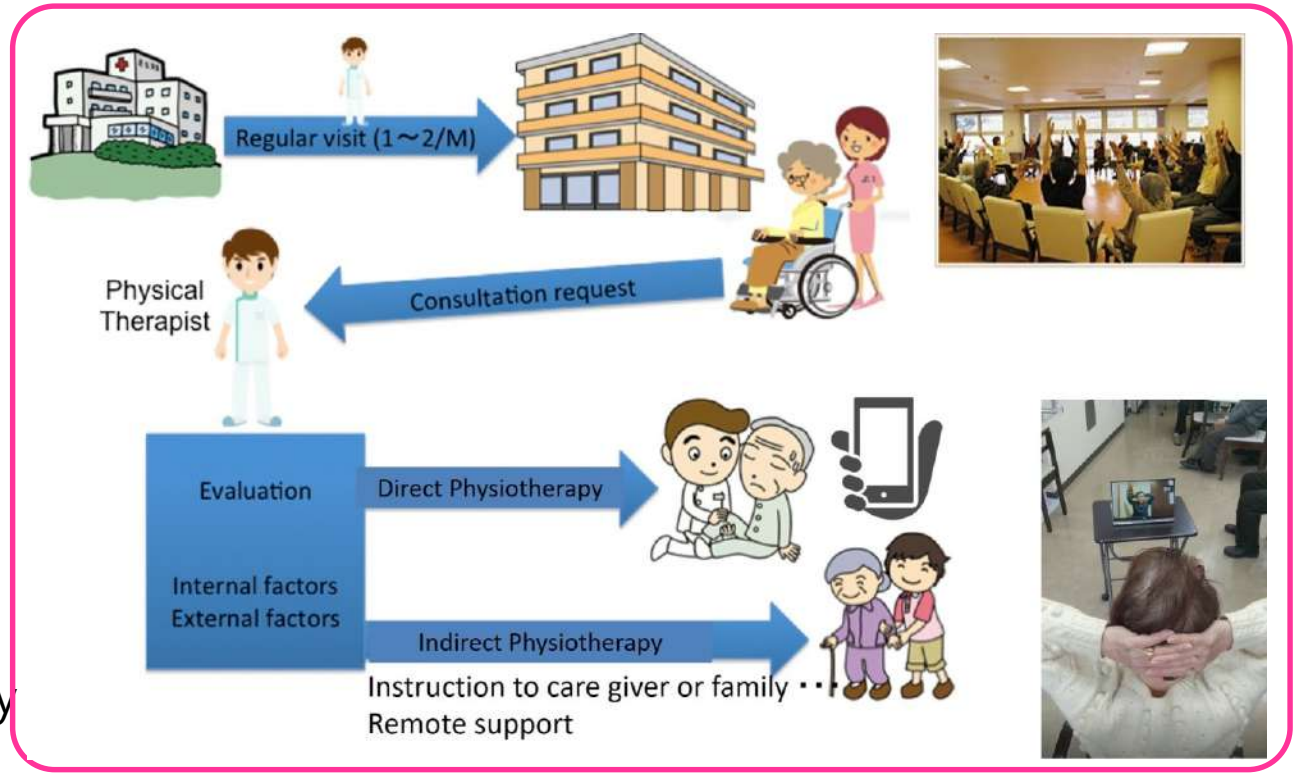
Melody International Ltd.

Online health promotion through Physical Therapy

Overview

What we can suggest: Indirect Physical Therapy using online health system; Fall prevention, Dementia prevention, Health promotion.
Our differentiation strategy: We are national professional membership organizations for physical therapists.

Since we are in public sector, we can gather objective and latest information regarding to above suggestions from all over Japan.
We can arrange the most effective and practical tools for this purpose using those information.
Appeals for East Asian society:
We had strongly connected with physical therapy professional body in East Asia. Co-sponsor with Japanese Ministries, Healthcare Officers and representatives from Asian countries invited for 2nd Asian Physical Therapy forum 2019.



Keywords ☑Remote Sensing ☑Telemedicine ☑Health System

Contact Us Japanese Physical Therapy Association

Web http://www.japanpt.or.jp/

Email t-ito@japanpt.or.jp

EMERGENCY TEMPORARY TOILET

Overview

～ Store『HOBOKAMI TOIRE』at critical places ～

Having toilets at evacuation sites is crucial for evacuees'physical and mental well-being as well as public hygiene.
Disasters are unpredictable; they may occur anytime,anywhere.
Therefore, store『HOBOKAMI TOIRE』at as many places as possible.
Not only at public spaces like parks, community centers, schools, train stations, airports and hospitals, but also at places such as large-scale commercial facilities and apartment buildings.
Storing『HOBOKAMI TOIRE』will be a lifesaver for disaster victims.

Keywords ☑Emergency Toilet ☑Disaster Prevention and Management

Contact Us Kawahara Technical Research Co., Ltd.

Web http://hobokami.com/pg103.html

Email info@kawahara-giken.com

⑥ Expanding access to education and improving the quality of education (distance and online education)

Concept: Providing “inclusive and high-quality education that leaves no one left behind” by using ICT.

Issues of Urban Cities and Goals

《Issues》

- Further improving the quality of school education
- Eliminating regional disparities due to regional characteristics (remote islands and mountainous regions, etc.).
- Quality assurance and globalization in higher education.
- Ensuring learning opportunities in the event that schools are temporarily closed due to a disaster or the spread of an infectious disease.

School facilities damaged by the inflow of earth and sand due to heavy rain.

《Goals》

- Developing human resources capable of responding to innovation through the use of IoT and AI.
- Improving the quality of detailed education and reducing the workload of teachers and staff.
- Realizing quality assurance and globalization in higher education.
- Ensuring learning opportunities in an emergency situation.

Academic support by using ICT while schools are temporarily closed.

Japan’s Solutions

- Drastic improvement of school ICT environment.
- Promoting the use of ICT in education.
- Improving efficiency of school affairs by using a school affairs support system.
- COIL(Collaborative Online Implementing Collaborative Online International Learning (COIL).
- Implementing distance and online education.

COIL (Online session between Tokyo University of Foreign Studies and a university in the U.S.)

⑦ Utilizing tourism resources to attract visitors from around the world

Concept: Revitalizing the local economy through tourism and the maximum utilization of tourism resources.

Issues of Urban Cities and Goals

《Issues》
- Revitalizing the local economy through tourism. Increasing the attractiveness of cities to that end.
- Connectivity and convenience of multiple modes of transportation.
- Providing quality services with reduced workload.

《Goals》
- Attracting visitors, promoting excursions, and revitalizing a region (through the establishment of a highly connected and convenient intra-regional mobility service).
- Increasing the percentage of repeat tourists.
- Maximizing the use of tourism resources.

Japan's Solutions

■ Tourism-type MaaS
- Seamless coordination of multiple modes of transportation using MaaS applications. Promote collaboration with other industries including coupon distribution on the platform.
- Support for tourist transportation in conjunction with on-demand car-sharing vehicle reservation and dispatch systems, etc., in tourist resorts.

【Remarks】 Eight projects including the following are supported as "Tourism type MaaS." (FY 2019)

(Example) Otsu City and Mount Hieizan areas.
In addition to free digital passes for multiple public transportation systems, providing MaaS that can be used at hotels, tourist facilities, retail stores, restaurants, etc. to promote excursions using public transportation.
(Operators: Keihan Holdings Co., Ltd. and Nihon Unisys, Ltd., etc.)

(Example) Izu area in Shizuoka Prefecture.
In addition to providing free digital rail and bus transit passes and operating on-demand transportation services such as MaaS, providing free digital passes for sightseeing facilities as MaaS. In this way, developing a comfortable environment that allows seamless travel at destinations to promote tourism and revitalize local communities. (Operators: Tokyu Corporation, East Japan Railway Company, etc.)

- Providing a service that combines self-driving buses and trains, etc., at a flat-rate and unlimited-ride fare.
- Distributing coupons linked to shopping and sightseeing.

■ Seamless and cashless payment using face authentication technology.

Places visited for on-site inspection
- Shirahama Town, Wakayama Prefecture
- Oya district, Utsunomiya City, Tochigi Prefecture
- Shizuoka Prefecture

Participating Companies Main Operators
- NEC Corporation (NEC)
- U Smart Council (Utsunomiya City)
- Shizuoka Prefecture, Softbank Corp.

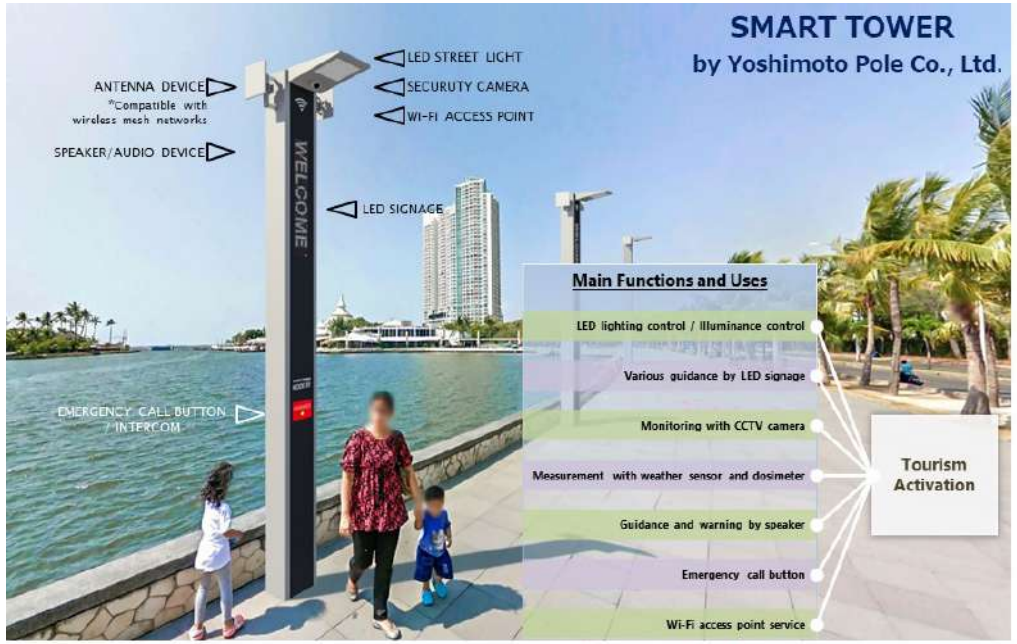
Multi-functional information station that meets future tourism demand ⊷ Landscape-Friendly Smart Tower ⊷

Overview

Area cover network:
In order to meet the demands of society for tourism, disaster prevention, and security in smart cities, with the wireless meshed network function, you can check the camera images in a moment without wired line or network for “Smart Tower”, which provides audio broadcasting and Wi-Fi access point services.

Full expandability:
As shown in the figure, Smart Tower can be customized with more multiple functions according to the needs of clients.

Specifications:
- Size (mm) : 400 (W) x 5000 (H) x 300 (D)
- Weight : Approx. 700kg
- Material : Iron(Hot-dip galvanized and Fluorine-resin coated）



Keywords ☑Security lights ☑Remote monitoring ☑Tourism information distribution

Contact Us Yoshimoto Pole Co.,Ltd.

Web https://www.ypole.co.jp/

Email y-haga@ypole.co.jp

⑧ Asset management and ensuring long-life and reliable infrastructure

Concept: Reducing the lifecycle cost of infrastructure by utilizing data based on reality.

Issues of Urban Cities and Goals

《Issues》

- Robust maintenance of basic infrastructure that supports people's daily lives.
- Addressing the unpredictability and difficulty of predicting the scale and location of infrastructure where an accident may occur.

《Goals》

- Maintaining infrastructure that can provide safety and security for residents while reducing the costs and risks of basic infrastructure management.
- Realizing planned basic infrastructure investments.
- Providing a safe and secure environment for residents including prompt recovery from a disaster by utilizing data.

Japan's Solutions

- Grasping and managing road surface conditions using data from accelerometers and vehicle-mounted cameras.
- Prioritized repair of heavily trafficked roads by using a combination of deterioration detection data based on AI-processed image data and human flow analysis data.
- Using the difference of three-dimensional point group data to grasp changes over time for the maintenance and management of roads and rivers.
- Highly accurate damage/leakage prediction using AI/machine learning for water pipes (Note: Tests are also being conducted on gas pipes).
- Calculation of the amount of accident risk taking into account the surrounding circumstances.

Predictive diagnostic system offered by Fracta

- Highly accurate prediction of the deterioration of underground water pipes without conducting direct physical inspection. Software that enables the optimization of investment in the replacement of water pipes by calculating "water leak probability."
- Establishing own environmental database including over 1,000 environment variables.
- The probability of leakage of each pipe is calculated and mapped by color coding from blue (safe) to red (dangerous) (see drawing on left).
- In the U.S., more than 60 water utilities in 27 states have already introduced the system.

Source: Created based on information provided by Fracta.

Places visited for on-site inspection

- Masuda City, Shimane Prefecture
- Fujieda City, Shizuoka Prefecture
- Atami City, Shimoda City, Shizuoka Prefecture
- Kobe City, Hyogo Prefecture

Participating Companies Main Operators

- Masuda City, Masuda Cyber Smart City Creative Consortium
- Fujieda City, Shizuoka Prefecture, Fujieda ICT Consortium
- Shizuoka Prefecture, Softbank Corp.
- Fracta

Development and operation of service apartment with Japanese-style hospitality

Overview

We have experience to develop and operate the service apartment business with Japanese-style hospitality "AXIA South Cikarang" in Bekasi, Indonesia, near the industrial area and will present the general solution of residencial service for business expatriates and travelers in each industrial area. We have offices in each ASEAN country and could provide various solutions for Smart City development.

Keywords ☑Service for business expatriates and travelers ☑Project Management ☑QOL

Contact Us Toyota Tsusho Corporation

Web https://www.ttc-residences.com

Email yasufumi_nakagami@toyota-tsusho.com

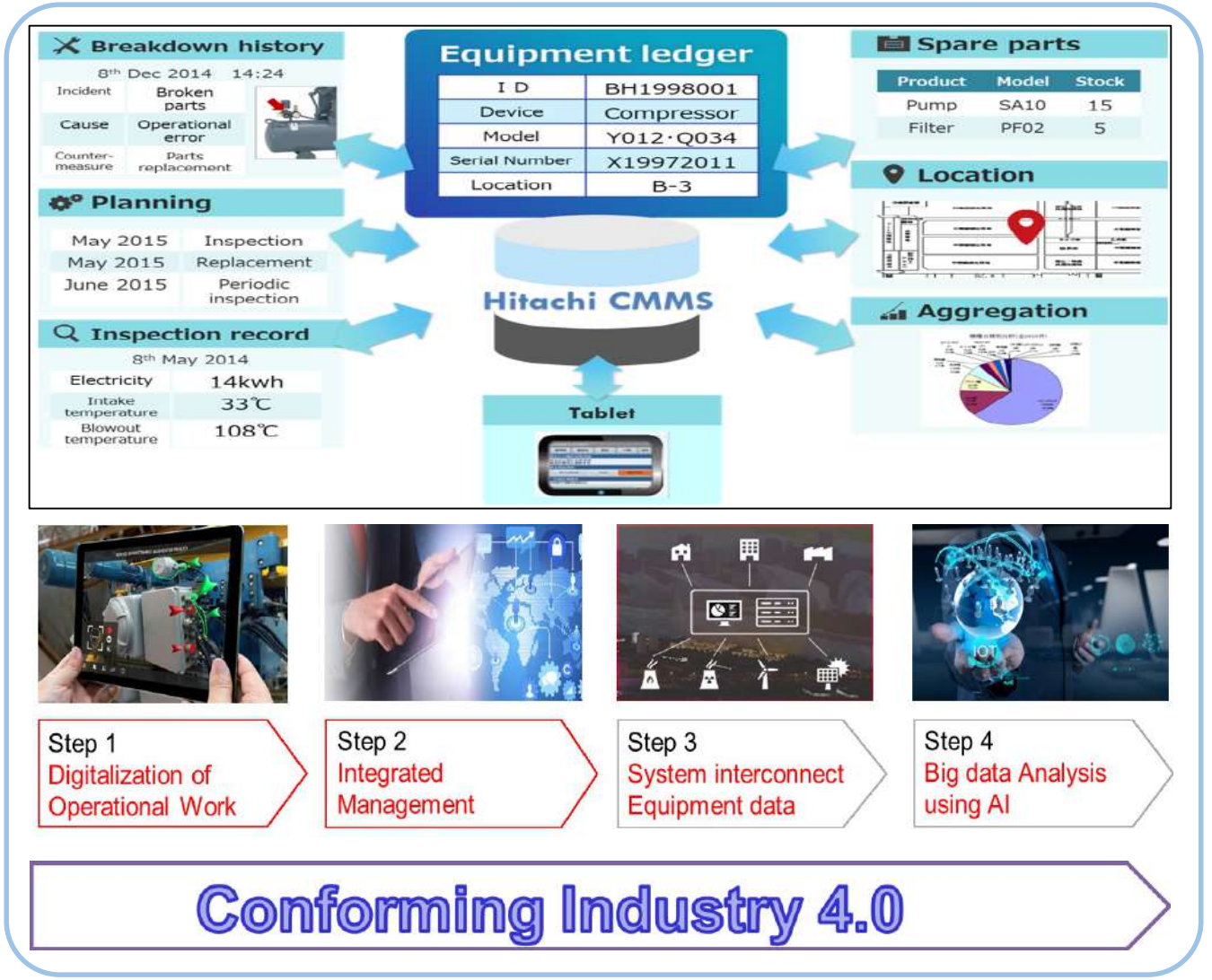
Hitachi CMMS(Computerized Maintenance Management System)

Overview

Hitachi CMMS compiles equipment ledger information into a database to improve work efficiency, work quality, and promote preventive maintenance.

This system has been introduced at 430 sites in the manufacturing, social infrastructure and after-sales service industries.

Implementing a CMMS is the first step to achieving Industry 4.0.



Keywords ☑Smart Infrastructure Maintenance

Contact Us Hitachi Ltd.

Web https://info.hitachi-ics.co.jp/eng/products/smart_fam.html

Email yuji.namiki.fq@hitachi.com

Urban Creation for Resolving Social Issues

Overview

'We have participated in planning, Design and construction of numerous urban redevelopment projects, including projects in metropolitan districts in Japan.

Contributions made through our various urban creation activities also include enhancement of competitive capabilities in international arenas, improvement, and solutions for a variety of other problems and needs facing cities today.
Such needs include healthcare & wellfare services since those services are rapidly growing market especially in South-East Asia.
We will also enhance the value of city development with healthcare function.

-Facility Management
-Design / Engineering
-Project / Construction Management
-Real estate / Development
-Healthcare Business Development

Keywords ☑Health System ☑Project Management ☑TOD

Contact Us TAKENAKA CORPORATION

Web https://www.takenaka.co.jp/takenaka_e/

Email https://www.takenaka.co.jp/takenaka_e/e_contact/inquiries/index.php

Desalination plants for reliable water supply

Overview

Hitachi Zosen and our 100% subsidiary, Osmoflo supply RO desalination plants. We have experienced over 450 projects offering drinking, process, high purity or recycled water all over the world. As an expert in developing leading edge solutions using membranes, we design efficient process scheme and customize suitable assets for each client to meet their requirements. Not only equipment supply, we can offer reliable O&M service, rental RO service, and BOO contract type business. Especially, we'd like to emphasize our capability of delivering projects under BOO scheme in which clients do not need to invest initial cost, but pay fixed monthly tariff.

☑

Keywords ☑Remote Monitoring ☑Disaster Prevention and Management ☑Energy Reuse

Contact Us Hitachi Zosen / Osmoflo

Web https://www.hitachizosen.co.jp/english/products/products011.html

Email k.kobayashi@hitachizosen.co.jp

Japan Smart Community Alliance

Overview

The Japan Smart Community Alliance aims to promote public-private cooperative activities toward the realization of a smart community by tackling common issues such as dissemination, deployment, and research on Smart Grid standardization. JSCA was formed 2010 and has 250 members.

JSCA Infrastructure Evaluation Study Group

The missions of Infrastructure Evaluation Study Group are to understand ISO 37153 (Smart Community Infrastructure Maturity Model) and to apply it to cities worldwide to encourage them to be Smart Communities. ISO 37153 enables your city to catch up with its own vision. This International Standard adopts a method of assessing your city's future vision by holding meeting where people have a talk about it according to 14 fundamental assessment points and defining the measurement metrics for the vision. JSCA Infrastructure Evaluation SG has expertise and experience in those activities not only for Japanese cities (2018), but also for Kota Bekasi in Indonesia (2017).

Japan
Smart Community Alliance

Keywords ☑Smart Community ☑Project Management

Contact Us JSCA Secretariat

Web https://www.smart-japan.org/english/index.html

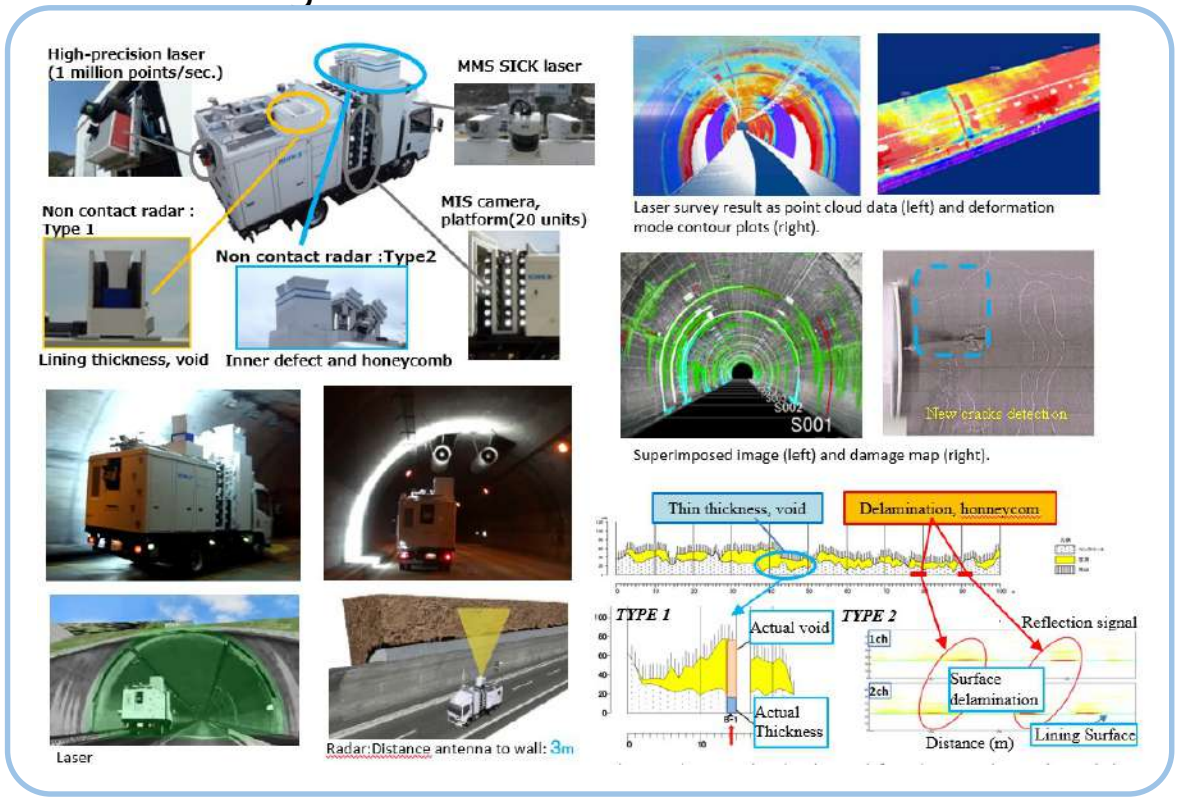
Email smart-japan@nedo.go.jp

ProjectInfrastructure Maintenance and Management

Overview

For the efficient use and operations in traffic infrastructure, PCKK provides the services for maintenance and management with new smart technologies.

Our management service also includes the investigation and proposal for the intensification of management, not only with the infrastructure maintenance but also with the remodeling and improvement.
In the tunnel survey project, with the application of our new mobile surveying technologies, MIMM-R will develop high- precision topographical and tunnel surveys and will display this information into 3D images, detecting concrete and pavement cracks, leakage, degradation, the thickness of the tunnel lining concrete, and the ground cavities.



Keywords

☑Smart Maintenance ☑Integrated Infrastructure Management ☑Damage Assessment
☑ Tunnel Survey

Contact Us

Pacific Consultants Co., Ltd.

Web https://www.pacific.co.jp/e/

Email yasuo.kannami@ss.pacific.co.jp

Infrastructure Management with 3D Road Database

Overview

The service that provides high-precision road space data acquired by Mobile Mapping System and 3D viewer. The characteristics are as follows:

(1) To provide highly accurate colored point cloud data that can be utilized for road design

(2) To provide functions to appear digital space in the desk top and to measure it

(3) To provide functions for infrastructure management on 3D database.

The assets managed by local governments are increasing around roads such as road conditions, bridges, safety facilities and drainages so on. 3D database enable investigations on desktop, storing repair histories efficiently, and preventive maintenance.

Keywords ☑Asset Management ☑Asset Management ☑Traffic Safety ☑Big Data and AI ☑Digital Twin

Contact Us

PASCO Corporation

Web https://www.pasco.co.jp/eng/

Email Haamja1465 haakyo2213@pasco.co.jp

⑨ Agricultural production and distribution bases that ensure safety and high quality

Concept: Initiatives toward social implementation of Smart Agriculture technologies such as robotics, AI and IoT, etc.

Issues and Goals

《Issues》

■ Labor shortage due to decrease in the number of business farmers and aging of farming population.

■ Need for further value addition and productivity improvement in preparation for expected market shrinkage due to population decline.

《Goals》

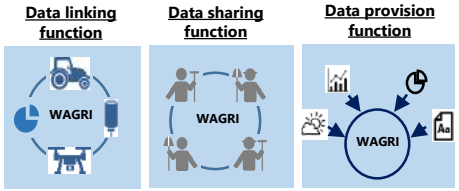
Solving issues by introducing advanced technologies such as robotics, AI and IoT in the field of agricultural production (smart agriculture).

■ Work Automation.
■ Simplified information sharing.
■ Data utilization.

Japan's Solutions

■ Agricultural Data Collaboration Platform (WAGRI)

- A platform that supports smart farming from a data perspective. Linking data from production to processing, distribution, consumption and export.



Three functions of the Agricultural Data Collaboration Platform

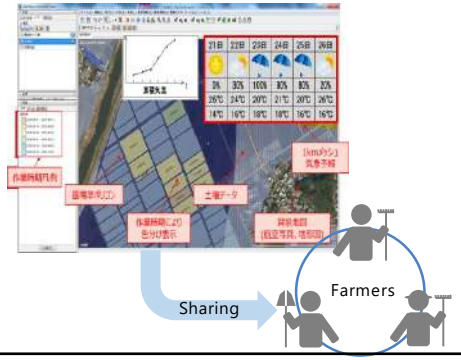
■ Work Automation

- Advanced technologies such as robotic tractors, etc., enable farmers to expand the scale of production.

Two robotic tractors, manned and unmanned, working in collaboration

■ Succession of farming skills and management

- Digitizing farm management with ICT and making farming more efficient by hiring new people.



■ Data utilization

- Using remote sensing data, etc., to predict the growth of crops, which achieves advanced agricultural management.

Cultivated field sensing using drones and satellites

Cultivated field sensing

Places visited for on-site inspection

- Nitta farm, Iwamizawa City, Hokkaido (Representative organization: Research Faculty of Agriculture, Hokkaido University)

Participating companies and main operators

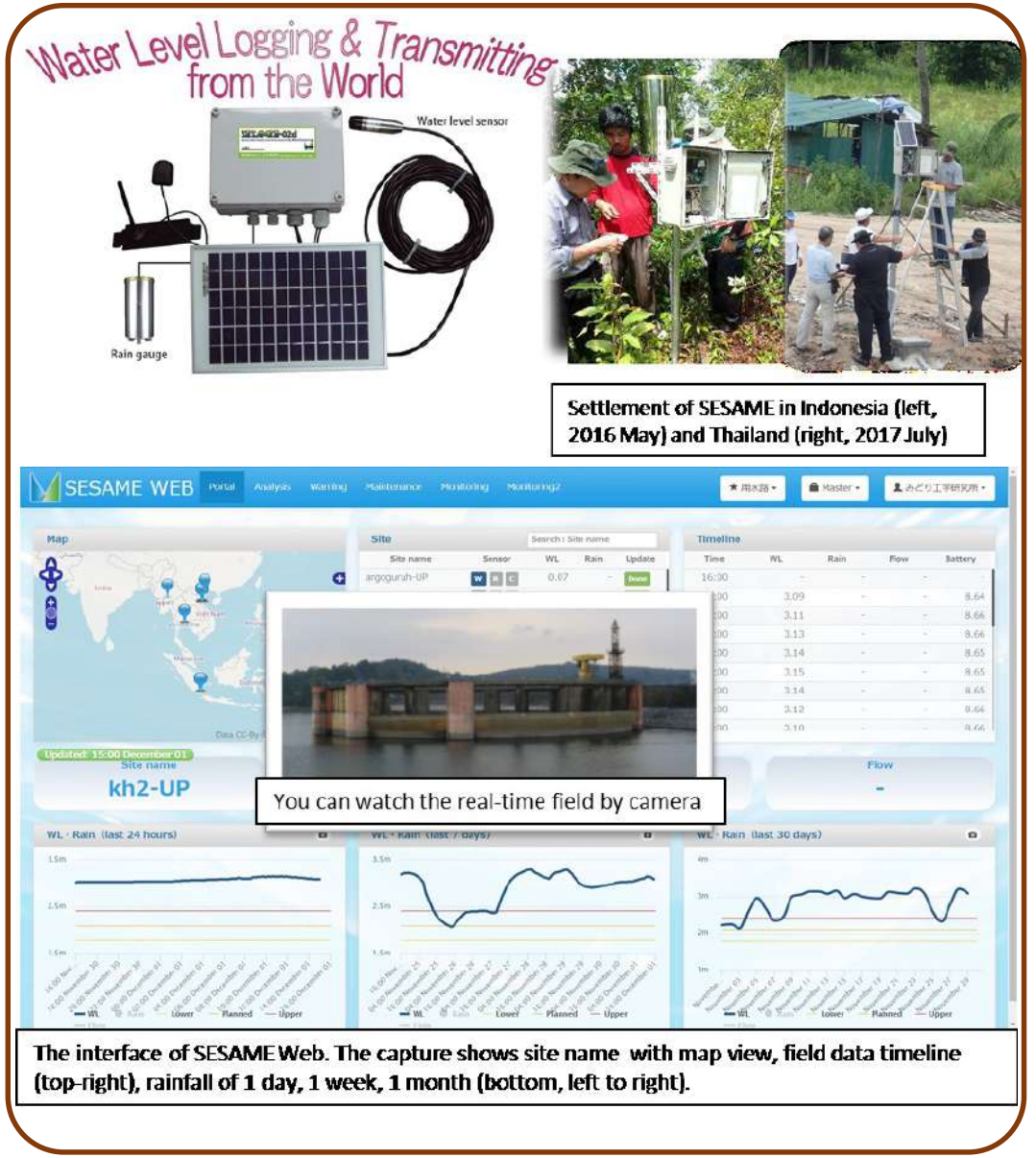
- Smart Link Hokkaido Inc.

Agricultural paddy water management system - SESAME

Overview

We consider water management is important, because water enriches soil, and nurtures life. SESAME is the field data transmission service using mobile phone networks that is accessible from anywhere in the world. You can watch data on PC browser, smartphone and tablet. Since SESAME is designed to adopt various kinds of popular sensors, you can observe water level, water quality (pH, EC, ORP, etc.), soil moisture, temperature, humidity, and so on. SESAME can be used with camera. It makes you observe the real-time situation of irrigation canals to know the amount of inflow, whether the water gate works, and how your crops grow. SESAME are installed in Indonesia, Thailand, Vietnam and Myanmar.

Features : Offer real time field data (water level, water quality, soil moisture, meteorological data, etc.)



Keywords

☑Water level sensor ☑Remote Monitoring ☑Security Camera

Contact Us

Midori Engineering Laboratory Co., LTD.

Web http://midori-eng.com/en/

Email komata@midori-eng.co.jp

⑩ Smart Solutions in Other Fields

Excellent Partner for Capacity Building and Expertise in ICT/IoT solution and technology

Overview

1. Capacity Building
1)Providing practical training program to seek solution for solving social problems by utilizing ICT/IoT technology and use cases (particularly "Disaster Management" and "Traffic Management" area)
2)Our training course will help participants to acquire the skills to identify issues and possible digital solution with hands-on experience by accessing Cyber-Physical System prototype model.
3)Our training program covers collaboration model to involve multiple organizations to tackle on-the-job scenario of actual digital initiatives.
2. Expertise
1)Providing Survey, Consulting, Advisory services as well as Field trial by sending Expertise in Digital Solution for social infrastructure.
2)Deployed "Smart Network" proving pilot project in Indonesia by utilizing Japan ASEAN Integrated Fund as well as conducted the study of the ICT infrastructure, Cyber Security and Use cases (Disaster Management and E-commerce, etc.)

Keywords

☑Traffic Congestion Analysis ☑Capacity building
☑Disaster Prevention and Management

Contact Us

Japan Telecommunications Engineering and Consulting Service (JTEC)

Web http://www.jtec.or.jp

Email naito@jtec.or.jp

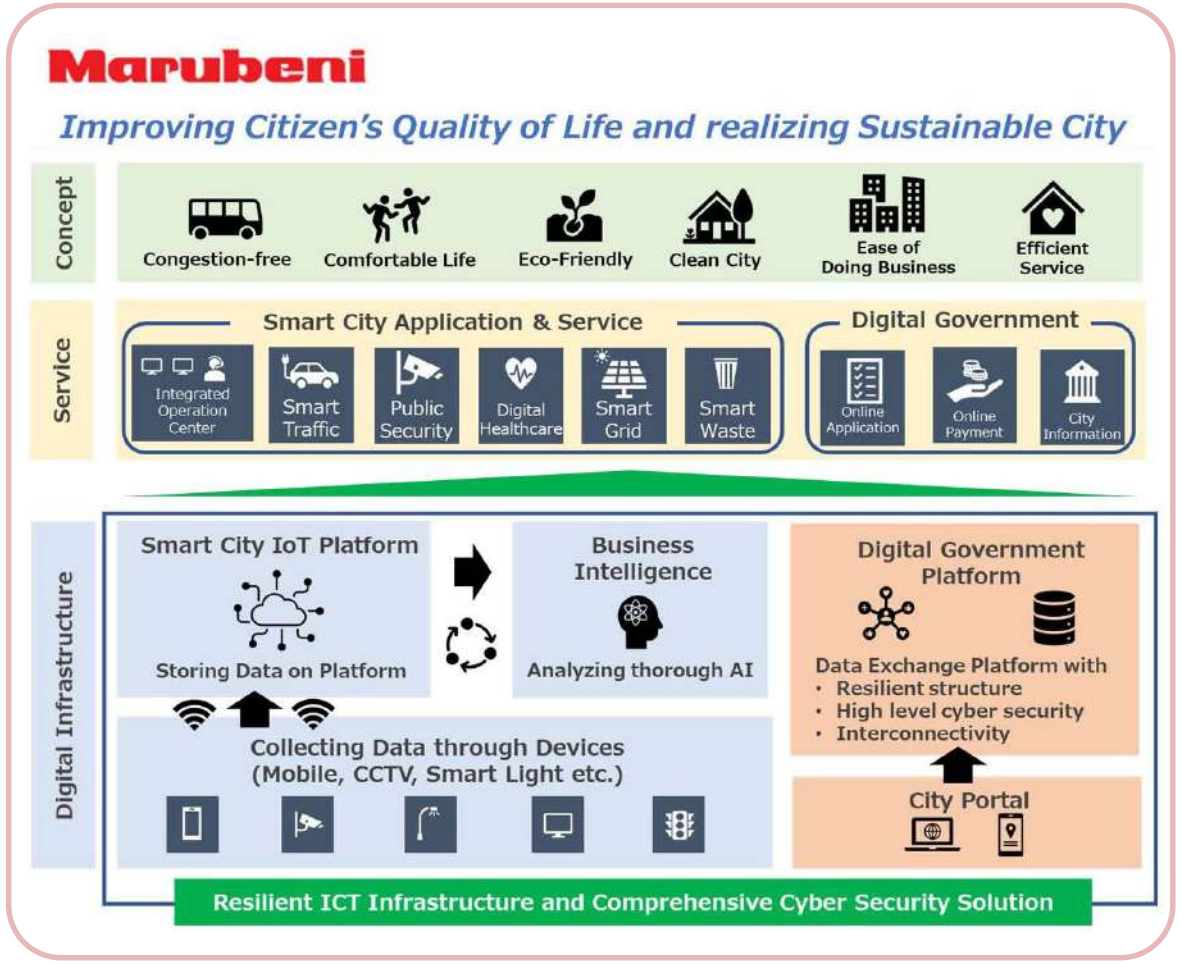
Workshop in Indonesia for Smart initiatives (Disaster Management, Waste Management, Traffic Management)

Technology transfer to lay underground optical cable in Indonesia

Smart City ICT service platform & digital government Platform

Overview

Marubeni can provide a state-of-the-art smart city ICT service platform through which city government may improve quality of city management in terms of energy optimization, traffic management, security control and so on. Marubeni has also partnered with digital government solution vendors who have proven technologies already implemented in the Republic of Estonia. Through these partnerships, we provide services such as online application, e-payment, city portal which will improve the efficiency and transparency of government services and improve QOL of residents.
Both solutions will be fully backed up by the sophisticated cyber security systems by advanced encryption and mutual authentication capabilities.



Keywords ☑Digital government platform ☑Smart city management platform ☑Project management

Contact Us Marubeni Corporation

Web https://www.marubeni.com/en/

Email kabayama-s@marubeni.com

Leasing & Installment sales

Overview

Provides leasing services including machinery and equipment leasing and various financial services in collaboration with nonmanufacturers and suppliers in each field.

Keywords ☑Renewable Energy ☑Project Management

Contact Us PT SMFL Leasing Indonesia

Web www.smfl.co.jp/

Email

Support for making master plan, PoC, benchmarking, PMO.

Overview

- Support for creating master plans: Support for formulating medium- to long-term plans and income and expenditure plans for the entire SC or for each function
- Service design support in each field: Support for specific service concept, design, and PoC in each city function is possible
- Survey in each field・Project management: Benchmark survey and analysis for specific service examination in each function, support as PMO is also possible

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野村総合研究所 Nomura Research Institute

Keywords ☑Project Management ☑Resilience

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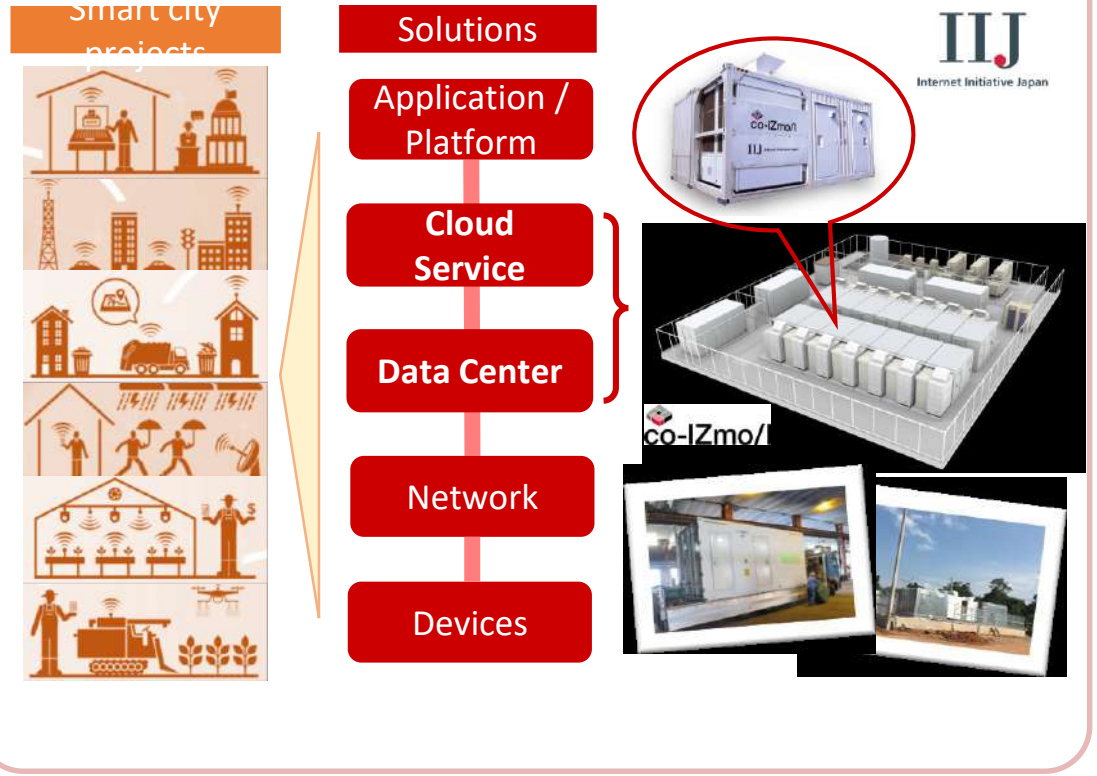
Modular Data Center supporting various smart city projects

Overview

Internet Initiative Japan Inc. (IIJ) provides cost-effective and location-free Modular Data Center “co-IZmo/I” for various smart city projects.

ASEAN cities engaged in smart city projects have a variety of focus areas such as e-government, traffic control, disaster reduction, education, healthcare, sightseeing, waste treatment and so on. Proper application/platform and data collection/analysis can be effective solutions in those areas.

IIJ’s Modular DC “co-IZmo/I” is an essential infrastructure supporting the solutions as all-in-one-package. Its energy saving equipment reduces energy cost by 40% compared with building-type DC. Short-term construction with Japanese quality and expandable structure can accelerate the projects. We have installed it in Lao PDR and Russia.



Keywords

☑Cost-effective and Location-free DC

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Examples of the development of smart cities overseas by Japan

Examples of major projects

Blue: Efforts to develop urban city infrastructure
Red: Efforts for urban city development using digital technology

Promoting Japanese-style education using digital teaching materials

- Providing Surala Ninja!," a digital learning material for learning arithmetic while interacting with cartoon characters.
- Promoting the establishment of independent study habits and the improvement of academic ability among elementary school students. (Sri Lanka)

Pilot operator: SuRaLa Net Co., Ltd.

A teacher training program on English teaching methods using Japanese digital teaching materials and ICT is being conducted at a national teacher training school through an industry-academia collaboration. (Cambodia)

Pilot operator: Uchida Yoko Co., Ltd.

Overseas expansion of Decentralized wastewater treatment system "Johkasou"

As of the end of 2019, more than 30,000 septic tanks with Japanese technology have been installed overseas, contributing to the improvement of public health and water environment conservation.

Overseas expansion of sewage system

- Established the Asia Wastewater Management Partnership (AWaP), a partnership toward resolving issues regarding wastewater in Asia.
- Since 2017, conducted overseas demonstrations of sewerage technology in five countries.
- Industry-academia-government collaboration to contribute to the spread of sewage systems overseas.

Smart city promotion by a Japanese company in Las Vegas, U.S.

- In December 2018, based on the results of the demonstration test (which began in September 2018), the NTT Group agreed with the City of Las Vegas and the State of Nevada to promote a smart city by commercially providing public safety solutions using advanced technologies. In February 2019, the company started providing its public safety solution services for citizens as part of commercial rollout while also expanding its business to other cities in the U.S.
- NTT was highly evaluated for not claiming the ownership of data.

(Image: NTT)

Smart city promotion by a Japanese company in Denver, U.S.

- A smart city project in the city of Denver based on the "Fujisawa Sustainable Smart Town" conducted by Panasonic Corporation in Japan.
- Achieving efficient energy use by taking advantage of advanced technologies of pilot systems including microgrids (distributed power generation network) and smart LED streetlights.

(Source: Panasonic Corporation)

Vietnam (Demonstration, etc.)
Cooperation in the development of smart city evaluation indicators

Vietnam: North Hanoi district urban development (introduced on P20)

Vietnam: Complex urban development in Binh Duong Province (introduced on P20)

Thailand: Eastern Economic Corridor (EEC)
Amata Chonburi Smart City Development Project
(Introduced on P20)

Thailand: Urban development project around Bang Sue Station in Bangkok.
(Introduced on P20)

Indonesia
Deltamas City
(Introduced on P20)

Promoting smart cities in New Clark City, Philippines.

- A new regional development project being conducted by the Base Conversion and Development Authority (BCDA) of the Philippines at part of the former U.S. military Clark base site located north of Manila for civilian use. Japan Overseas Infrastructure Investment Corporation for Transport & Urban Development (JOIN) is involved from the upstream process.
- In July 2016, BCDA and JOIN developed a master plan that included a smart city concept. The goal is to achieve sustainable urban development using ICT.

U.S.
Horizontal expansion of data utilization model

Central and South America (demonstration, etc.)
Research and demonstrations aimed at expanding ICT solutions that promote smart cities in small and medium-sized cities (targeting Chile, Colombia, Argentina, etc.)

Cambodia: Introduction of High-Efficiency LED Streetlights Using Wireless Networks

- The installation of LED streetlights in various places from emerging cities to World Heritage sites saves 70% of energy.
- Building a smart city environment with a focus on establishing a wireless network environment through the installation of LED streetlights.

Indonesia Bumi Serpong Damai (BSD) district Mixed use development project

A project by Mitsubishi Corporation, Nishi-Nippon Railroad Co., Ltd., Hanshin Electric Railway Co., Ltd., and Keikyu Corporation to jointly develop commercial facilities and detached housing in a part of a large development area southwest of Jakarta.

Indonesia: Jakarta Garden City Central Area Urban Development Project (TOD)

- A project to develop and operate commercial facilities and bus terminals in the suburbs of Jakarta. AEONMALL Corporation and JOIN will jointly invest and participate in the project. The Joint Crediting Mechanism (JCM) is also used to introduce Japanese technology.
- Transferring Japan's expertise in TOD support to Indonesia. It is also expected to serve as an evacuation site in the event of a disaster, which promotes a high level of disaster preparedness in Japan.

(Image of Completed Project: Material provided by the Ministry of Land, Infrastructure, Transport and Tourism)

Australia: Development plan for the new Western Sydney Airport

- A new urban development promoted by the New South Wales Government in Australia with focus on a new airport to be opened in 2026.
- Memorandums of Understanding (MoU) were signed between the New South Wales Government and the following Japanese companies: Mitsubishi Heavy Industries on the proposal for energy management solutions, etc.; Hitachi, Ltd., in the field of healthcare and heavy industry, etc.; NEC Corporation on the utilization of biometrics, 5G, IoT and AI, etc.; and Sumitomo Mitsui Banking Corporation (SMBC) on business opportunities.
- Urban Renaissance Agency (UR) signed a memorandum of understanding with the New South Wales Government for technical assistance to the development around the new Western Sydney Airport and an advisory agreement with Western City and Aerotropolis Authority (WCAA).

Source: Compiled by the Cabinet Secretariat based on various materials.

Examples of Japan's urban infrastructure development overseas

～Based on the development of solid urban infrastructure, promoting future cities that utilizes digital technology, etc.～

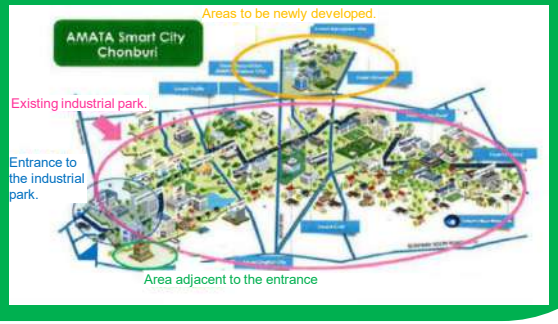
Complex urban development in Binh Duong Province, Vietnam

Supporting the complex urban development by conducting feasibility study (F/S) on the development of railways, stable electricity supply, and the development of ICT communication networks around cities.

(Image: Becamex Tokyu Co., Ltd.)

Eastern Economic Corridor (EEC) in Thailand Amata Chonburi Smart City Development Project

- A national comprehensive regional development project that designates three eastern provinces in Thailand (Chachoengsao, Chon Buri and Rayong), which are home to a high concentration of Japanese companies, as special zones with the aim of developing large-scale infrastructure and attracting advanced industries.
- As the Amata Chonburi Smart City Development Project, Amata Corporation Public Company Limited, a local conglomerate, is working with the City of Yokohama, Yokohama Urban Solution Alliance (YUSA) (an incorporated association established mainly by companies in Yokohama City), etc., to upgrade existing industrial parks (making them smart) and develop smart cities.



(Image: AMATA)

Urban Development Project (TOD) around Bang Sue Station in Bangkok, Thailand

- Urban development project (372 hectares) around Bang Sue Station, which will become the terminal station for the airport rail link, urban railway, and high-speed railway, such as the Red Line under development through yen loan from JICA.
- Multiple master plans prepared by each Thai organization were integrated and improved with the cooperation of Japan. Going forward, the Government of Japan aims to facilitate Japanese companies' participation in the development.

Image Drawing (Source: JICA survey report)

Delta Mas City in Indonesia

- The project is being developed by Sojitz Corporation jointly with a local developer in the east of Jakarta. Planning to develop commercial, residential and educational facilities in an area of 1,464 hectares.
- Aiming to build a showcase for demonstrations of smart technologies and services using IoT, AI, etc.

(Image: Sojitz Corporation)

Smart City Development in Northern Hanoi, Vietnam

- The development is underway with local companies in an area of 272 hectares north of Nhat Tan Bridge, roughly halfway between Noi Bai International Airport and Hanoi's city center. A TOD is under consideration in the basic survey, which centers on a new station in the main development area of the railway (Hanoi Line 2). Aiming to create a safe, secure and comfortable environment and community through the development of hospitals, schools, disaster prevention facilities, security systems, commercial facilities and greening facilities.
- Also planning to upgrade smart city services through the introduction of 5G, face recognition system and blockchain technologies.

(Image: Sumitomo Corporation)

List of Japan's support available for the Introduction of Smart Cities

Organizations	Contents of Support
JICA	● Technical support for developing countries to formulate and implement their smart city plans. ● Formulation of an urban development master plan that envisions the overall vision of a smart city, technical support for the promotion of TOD in conjunction with public transportation, financial cooperation for the development of social infrastructure to realize the plan, and response to private sector demand for funds through overseas investments and loans. ● Expanding support by local governments that are proactive in sharing their experience in smart cities to overseas by utilizing financial cooperation and grassroots technical cooperation to promote the export of urban infrastructure. https://www.jica.go.jp/information/seminar/2019/20190516_01.html https://www.jica.go.jp/publication/mundi/ku57pq00002kfsx7-att/201611.pdf
JBIC	Support for projects such as smart city, smart energy and green mobility, etc. with Japan's technology through loans/guarantees/ equity participations etc. https://www.jbic.go.jp/en/business-areas/sectors/infrastructure.html
NEXI	Providing insurance covering country risks and credit risks associated with international trade and other overseas transactions (export, investment, loan) conducted by Japanese companies. Loan Insurance for Green Innovation with higher coverage rates can be applied particularly to projects that contribute to environmental protection and energy conservation. Examples of projects covered by the insurance: renewable energy, smart grid, energy management system (EMS), Net Zero Energy House Grade B (ZEH/B), green mobility, hydrogen-related technologies, fuel cell-related technologies, etc. https://www.nexi.go.jp/en/topics/newsrelease/2019072901.html
JOIN	JOIN invests in overseas transportation/urban development projects with Japanese companies. Supporting Japanese companies to further advance into overseas infrastructure markets, JOIN will engage in ・investing in new-technology related projects（Smart City, TOD, and MaaS）. ・investing in projects that support transport/urban development projects (such as energy, telecommunications, water, waste management and IT solution) http://www.join-future.co.jp/english/our-mission/index.html
JICT	When Japanese companies participate in overseas projects to develop and operate ICT infrastructure related to smart cities (networks, data centers, sensor networks, etc.) and projects to provide services using such infrastructure (e.g. ICT solutions using social data collected from sensor networks), JICT can help to organize financing schemes and provide hands-on support after investment. https://www.jictfund.co.jp/en/business/isJict/
Ministry of the Environment (JCM)	The Financing Program for JCM funding support program provides support for the initial cost of introducing Japanese advanced decarbonization and low-carbon technologies and equipment such as renewable energy and energy conservation in the JCM partner countries. Financing Program for JCM Model Projects：<http://gec.jp/jcm/> CARBON MARKET EXPESS：<https://www.carbon-markets.go.jp/eng/>