Japan's smart city good practice and "Smart JAMP"

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History of Urban Development in Japan

Source：the materials of the 2nd ASEAN-Japan High-Level Meeting on Smart Cities Network,

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	1960～ High economic growth period	1980 ～ Stable growth period	2000 ～ Maturity
Issue	• Shortage of housing due to population concentration in urban areas • Infrastructure (electricity, water etc.) shortage due to rapid urbanization • Environmental problems and pollution such as air and water pollution	• Dealing with high quality living environment needs that come with improved living standards • Worsening of traffic congestion with progress of motorization • Underutilized and unused land due to change of industrial structure • Increased environmental awareness	• Dealing with low environmental burden town planning needs • Decreasing vitality in urban centers due to falling birthrates, ageing society, and decreasing population • Utilizing progressively deteriorating housing stock
Solution	1. Decentralize urban functions through new town development in coordination with traffic infrastructure 2. Mass supply of housing (provision of new urban areas) 3. Legislation in order to realize urban policy	4. Improved housing performance standards 5. Expansion of traffic infrastructure networks 6. Maintenance of existing urban areas 7. Resource circulation efforts	8. Compact City Plus Network town planning 9. Stock regeneration 10. Landscape protection **11. Realization of Smart Cities**

Characteristics of Smart City in JAPAN

Source：the materials of the 3rd ASEAN-Japan High-Level Meeting on Smart Cities Network,

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Japan's Smart Cities～ Solving Global Issues such as SDGs with Japan's Society 5.0 ～

3 pillars characteristic of Japan

①Eco-Cities (environmentally symbiotic cities)

②TOD (Transit-Oriented Development)

③Building Disaster-Resilient Cities (Resilient Cities)

Issues and Solutions

① Realize the world's highest level of a safe and secure society (eg: crime prevention, disaster prevention, traffic accident reduction etc.)

② Demonstrate maximum ability of traffic and logistics infrastructure (eg: MaaS, autonomous driving, car-sharing etc.)

③ Realize efficient energy use and zero emissions

④ Become the world's highest level recycling society

⑤ World-shaking infection control measures and public health

⑥ Expand access to education and improved education quality (distance / online learning)

⑦ Utilize tourism resources to attract people from around the world

⑧ Dependable infrastructure asset management and extending life

⑨ Safe and high quality agricultural production and distribution infrastructure

Basic Concepts and Principles

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Three Basic Concepts

- Oriented to Citizen and User Demands
- Focusing on Issues and Visions
- Co-operation across Sectors and Cities

Five Basic Principles

- Fairness and Inclusiveness
- Privacy
- Sustainability in Terms of Operation and Finance
- Security and Resiliency
- Interoperability, Openness and Transparency

Golden Rules

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- It is necessary to **maintain diversification of each** city by adapting to various circumstances and requirements which the city has.

- It is necessary to **involve various types of participants** from local governments, industries & companies, academics and citizens.

- It is necessary to **ensure openness and transparency**. At the same time, it is important for a wide range of people from various sectors and organizations to make reliable data freely available. Moreover, it is required to establish confidence in privacy, data protection, intellectual property rights and data security.

Smart City Projects in Japan

Source：the materials of the 3rd ASEAN-Japan High-Level Meeting on Smart Cities Network,

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FY2017-2020

about 200 Demonstration projects in about 160 areas were done

Implementation of City OS projects are in progress in 23 areas (at September 2020)

Implementation 100 areas by FY2025

Hokuriku region
7 areas, 11 projects

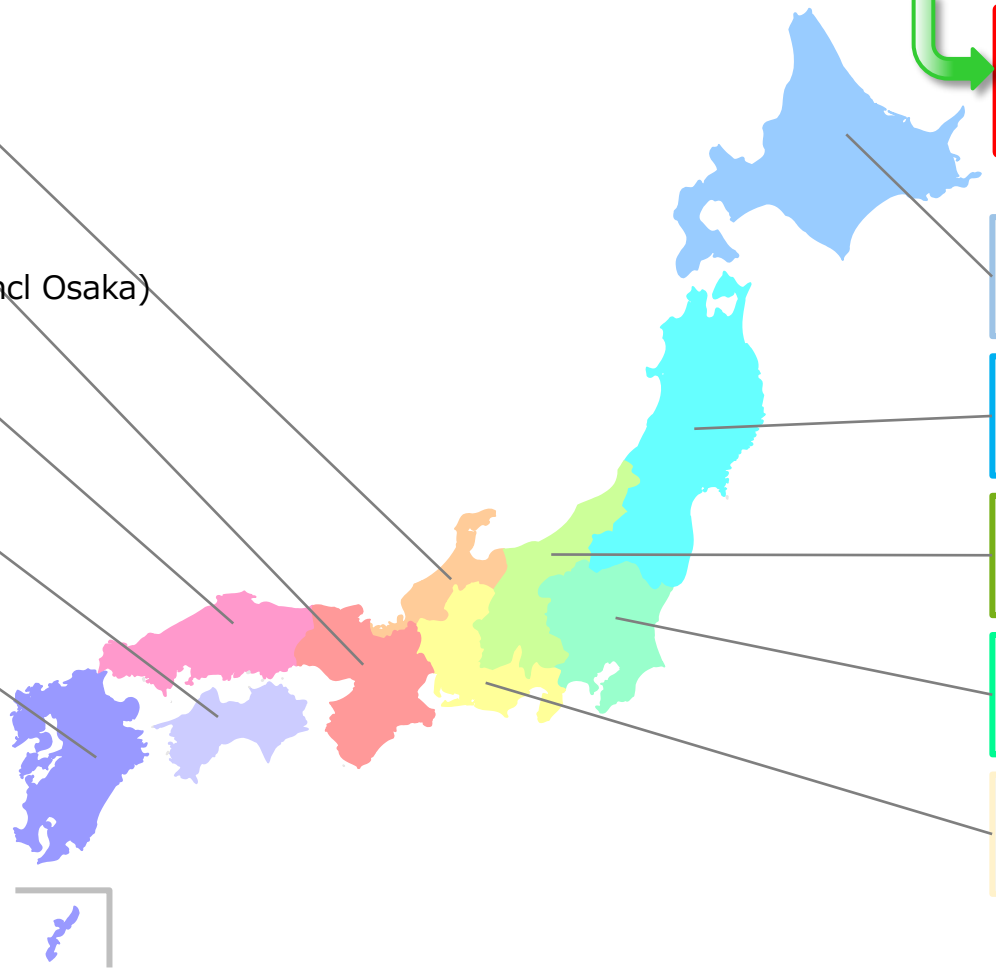
Kansai region*
26 areas, 29 projects

(*incl Osaka)

Chugoku region
17 areas, 19 projects

Shikoku Region
10 areas, 12 projects

Kyushu region
16 areas, 16 projects



Hokkaido region
9 areas, 12 projects

Tohoku region
7 areas, 10 projects

Shin-etsu region
5 areas, 7 projects

Kanto region**
44 areas, 58 projects

(**incl Tokyo)

Tokai region
19 areas, 26 projects

(Cabinet Office)

Eco-City : Fujisawa (Kanagawa pref.)

Source：Cabinet Secretariat "Japan's Smart Cities"

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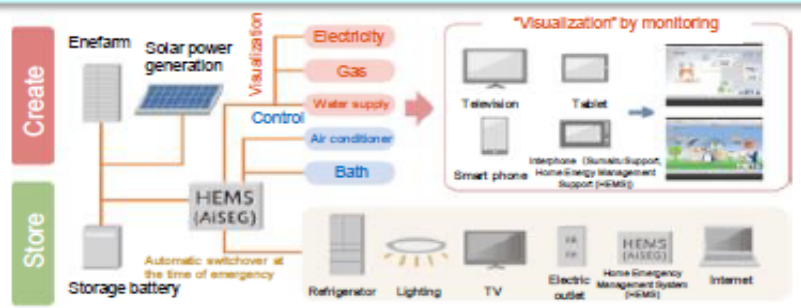
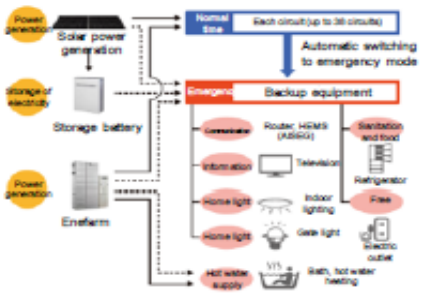
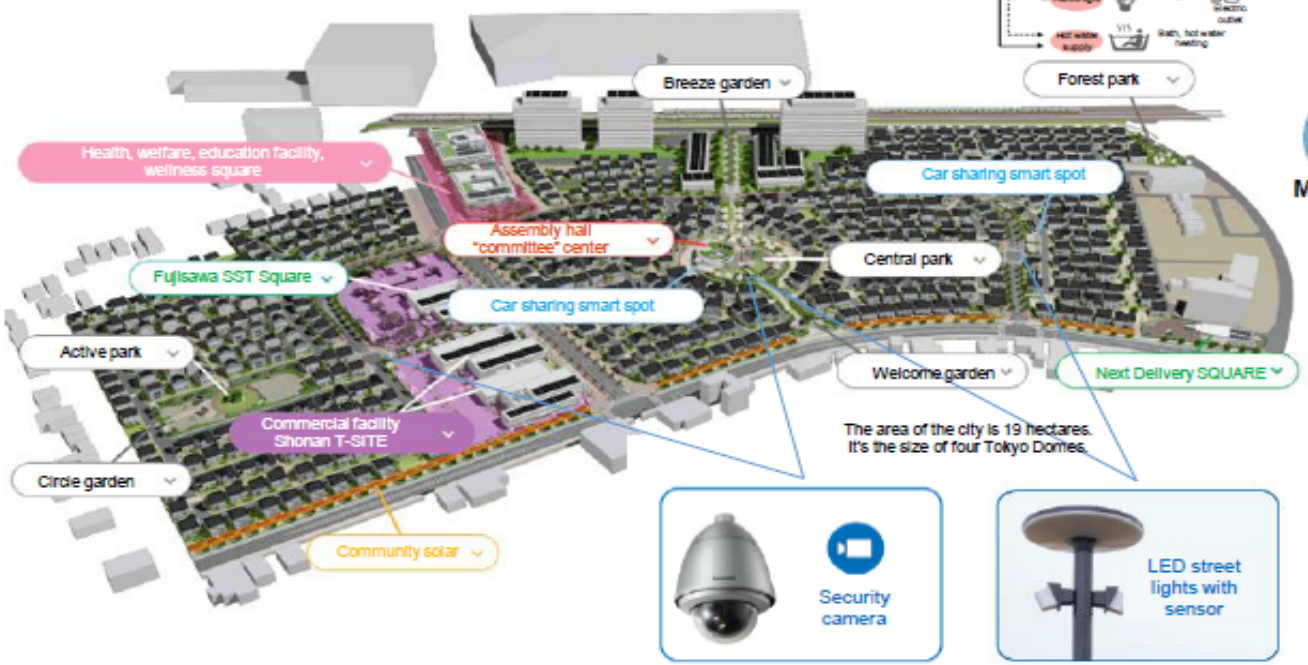
Realizing carbon free housing through the thorough introduction of low-carbon technologies

Energy

Through the visualization of energy use and standardization of smart homes equipped with photovoltaic power generation system and storage battery unit in all detached houses, realizing a self-produced, self-consuming energy life, ensuring that energy supply will continue for three days even in an emergency.





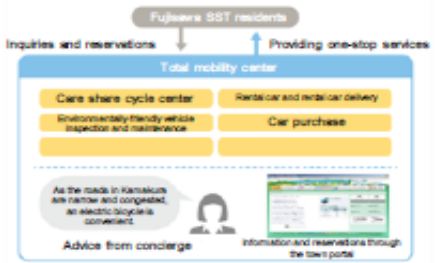


Providing total mobility services according to the occasion of usage and needs.

Mobility

Providing more convenient and eco-friendly mobility services, including electric vehicle (EV), electrically power assisted bicycle sharing, and delivery service of rental car close to home.

Total Mobility Center



Two EVs are reserved. In case of an emergency, the V2H system supplies electricity to the assembly room, etc.

Realizing a safe and secure city by making full use of ICT

Monitoring

Realizing a safe and secure city with a security system covering the whole area, including security cameras, smart lights that detect people and increase their luminous intensity, patrol by security concierges, and PUSH transmission of disaster prevention information to home TVs in the event of an emergency,

TOD : Tsukuba (Ibaraki pref.)

Source：Cabinet Secretariat "Japan's Smart Cities"

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In order to promote the social participation of the elderly, etc., with reduced mobility, aiming to create a city that facilitates their going out by providing a mobility system that allows them to travel safely, securely and comfortably without relying their own cars.

Goals

- Ratio of people whose daily transportation is by private car 85.8% (current %) → 83.5% (FY2024)
- Ratio of elderly people who feel life is comfortable 31.4% (current %) → 34.4% (FY2024)
- Smart city project user satisfaction -% (current %) → 47.2% (FY2024)

Details of the Plan

Traffic congestion prediction using AI

Predicting congestion in advance and establishing an optimal traffic model to solve congestion by acquiring and analyzing traffic flow data.

The optimal operating model for public transportation

Developing an optimal public transportation model, including the development of operation plans that minimize waiting time costs by acquiring and analyzing human flow data.

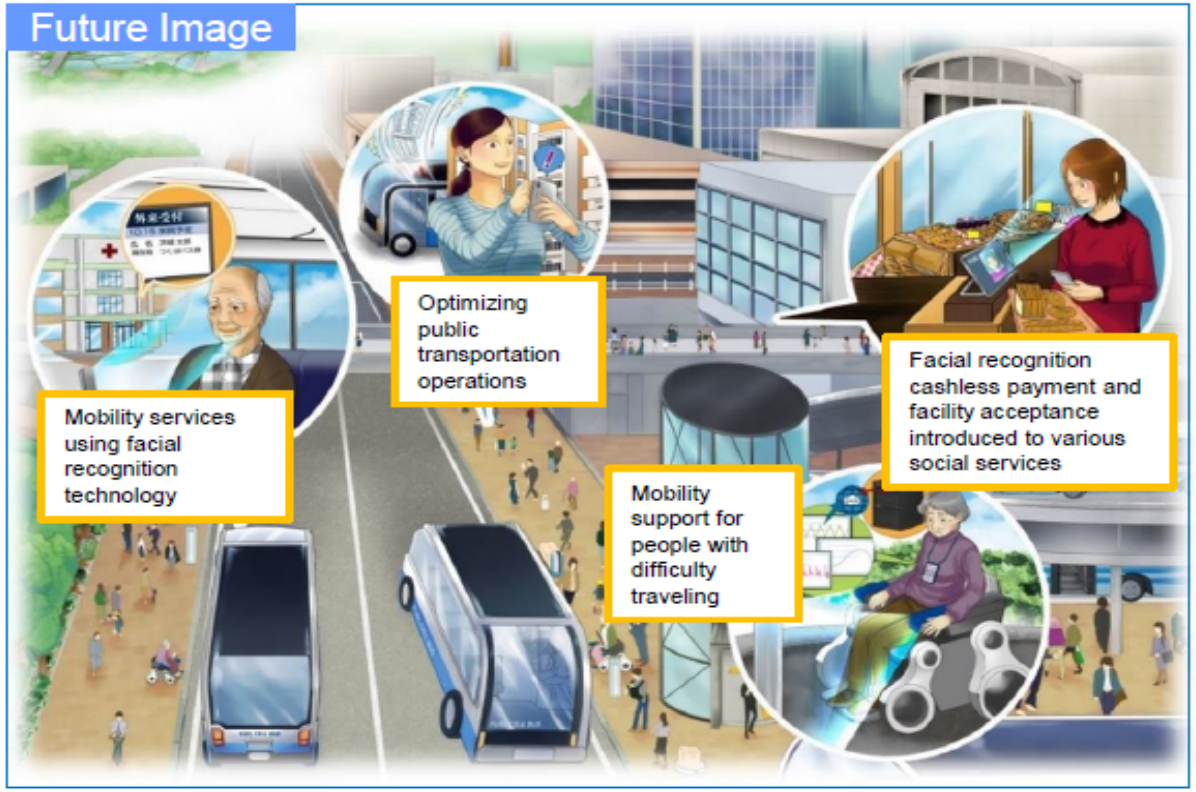
Encouraging the elderly to go out using facial recognition

Developing services and building systems that encourage the elderly to go out by using facial recognition technology including "riding in a bus" or "payment."

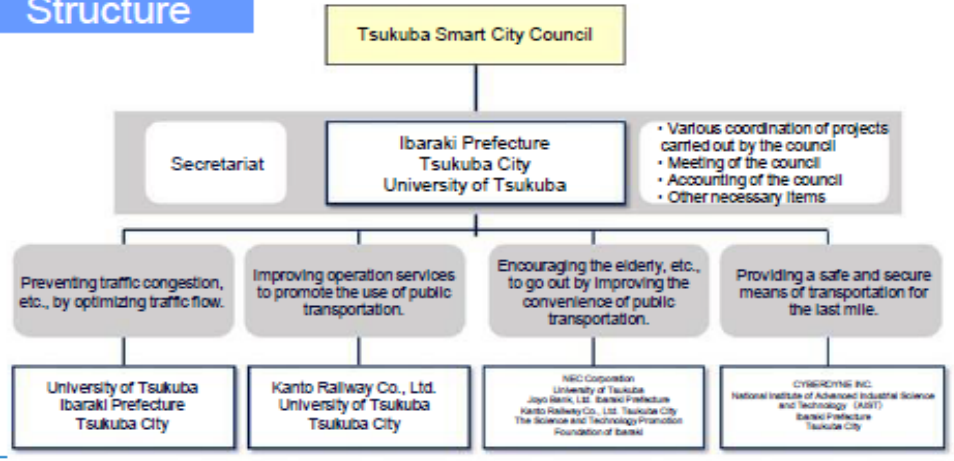
Introduction of Personal Mobility

Integration of human physiological system with mobility to support the mobility of people with difficulty traveling, and implementation of a compact mobility system linked to a pedestrian signal information system.

Future Image



Structure



Schedule

~FY2021 Implementation
- On-site demonstration of measures to prevent traffic congestion.
- Considering an appropriate operation schedule, etc.
- Implementation of MaaS by facial recognition.
- On-site demonstration of personal mobility.

FY2022~Implementation
- Implementation of measures to prevent traffic congestion.
- Considering a new form of public transportation management, etc.
- Implementation of various services by facial recognition.
- Introduction of personal mobility.

Resilient : Kakogawa (Hyogo Pref.)

Source：Cabinet Secretariat "Japan's Smart Cities"

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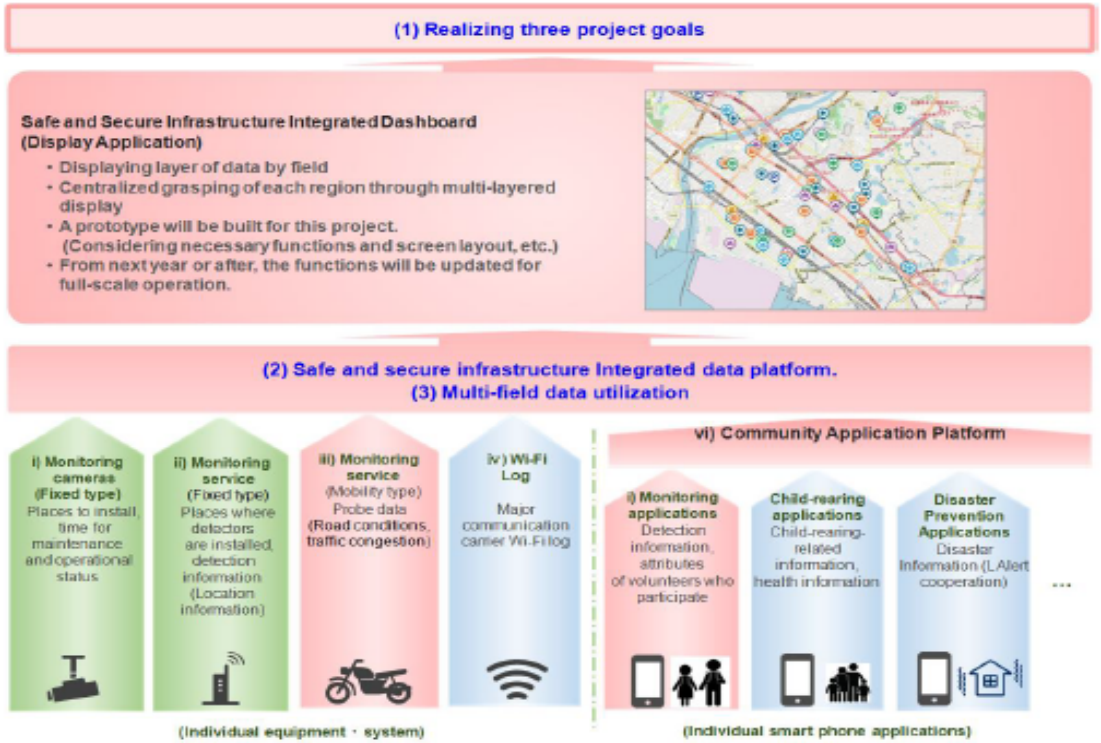
Main Efforts



(1) Three project goals

① Increase the number of immigrants and permanent residents by improving citizen satisfaction.
② Improving the quality of life and productivity of citizens and reducing the financial burden.
③ Strengthening local power (local communities) and regional revitalization.

(2) Safe and secure infrastructure Integrated data platform.

① Planning the adoption of cloud system and data collaboration.
② Composed with FIWARE as the center.
③ Open API for data utilization.

(3) Multi-field data utilization

① Urban planning for crime prevention: Information on security tag detection, security cameras.
② Urban planning for transportation: Bus location and vehicle-mounted sensors.
③ Urban planning for disaster prevention: Community application (push notification), and disaster prevention and disaster reduction Information (J/V/L Alert).

Monitoring

Creating a safe and secure city using ICT

Providing guardians with information on the location of children and the elderly with detectors installed in security cameras, postal vehicles, and official vehicles.

Mail vehicle

Security camera

Mobility

Improving the convenience of regional public transportation

Opening up information on community bus location and bus stops, etc. by using a data linkage platform.

Disaster Prevention

Optimizing evacuation behavior through the timely distribution of information on disaster prevention and disaster reduction

Effective push notification of emergency and disaster information such as evacuation advisory, etc., by using location information

Japanese Urban Development in ASEAN

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Indonesia – Delta Mas City

Completed image drawing of Delta Mas City

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Thailand - Urban Development Project around Bang Sue Station（TOD)

Image of urban development around Bang Sue Station

Vietnam - Smart City Development in Northern Hanoi

Image drawing of completed first (※First stage is in the red dotted area)

Vietnam - Complex Urban Devlopment in Binh Duong Province

Becamax Tokyu

Tokyu bus
(Uses ICT technology, low environmental impact)

Thailand - EEC（Eastern Economic Corridor) AMATA Chonburi Smart City Development Project

Chonburi Smart City master plan drawing

Smart JAMP ~Smart city supported by Japan ASEAN Mutual Partnership~

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Implementation of concrete smart city project formation	• **Study Implementation** – Implement studies based on the needs of AMS and cities in order to form prospective projects – Master plan, pre-feasibility study, feasibility study, or demonstration test
Promotion of financial support for ASEAN smart city proposals	• **Financial Support** – Loan by JBIC up to 200 billion yen in total – Equity investment by JOIN up to 50 billion yen in total
Strengthening support for smart city in ASEAN countries	• **Consultation** – Designate secretaries in Japanese Embassies as advisors – Consulting accompanied by support from representatives of JICA, JETRO, JBIC and JOIN
Smooth information sharing and mutual cooperation through JASCA website	• **Contact Channel** – Obtain information on technologies and solutions inside and outside Japan – Request for contact with Japanese companies

Projects of “SmartJAMP” in Indonesia

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✓ **Survey based on proposals from ASCN member cities (city proposal) and Japanese companies (company proposal):**

<City proposal>

- Place : Banyuwangi
- Theme : Master plan
- Outline :

The following efforts will be made as basic research for promoting Smart Kampong in Banyuwangi.

- Organize the current status of Smart Kampong.
- Examine the master plan for expansion of the Smart Kampong service field.
- Examination of the policy for expansion of the Smart Kampong platform

<Company proposal>

- Place : DKI Jakarta
- Theme : infrastructure O&M
  (Road diagnosing system based on image analysis technology)
- Outline : Demonstration experiment to compile road damage data using vehicles equipped AI image recognition application.

Terima kasih.

ありがとうございました。