Japan’s Support for Smart City Development in ASEAN

- Progress of Smart JAMP and Guidebook -

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Ministry of Land, Infrastructure, Transport and Tourism
Government of Japan

October 18th, 2021
Co-operation between ASEAN and Japan

2018 Chairman’s Statement of the 32nd ASEAN Summit
We agreed on the growing importance for ASEAN Member States to leverage on innovation and technology to improve the lives of our people. In this regard, we agreed to establish an ASEAN Smart Cities Network (ASCN) to synergise development efforts, share best practices and catalyse more opportunities for growth, innovation, capacity-building and sustainable development. We further agreed that the ASCN would promote an inclusive approach and take into account city-specific needs, potential, local and cultural uniqueness, as well as level of development.

2018 First Annual Meeting of ASCN

2018 Chairman’s Statement of the 33rd ASEAN Summit
• Adopted ASEAN Smart Cities Framework

2019 Establishment of Japan Association for Smart Cities in ASEAN (JASCA)
• Purpose: i) to provide ASEAN countries with information on Japanese technologies and experiences, ii) to build partnership in both public and private sectors with ASEAN countries.
• Member: Japanese 7 ministries, 11 local governments, 16 public organizations, 266 private companies, 5 associations as of September 2021.
2019  
1st ASEAN-Japan Smart Cities Network High-Level Meeting  
- the importance of the challenge-oriented concept and the overall optimization concept  
- strategic objectives of a high quality of life, competitive economy, and sustainable environment  
- The Meeting acknowledged that the Japan Association for Smart Cities in ASEAN (JASCA) was established as a framework to facilitate cooperation between ASEAN and Japan, and is composed of potential Japanese Partners, both public and private, from various fields that have interests towards ASEAN.

2020  
Joint Statement of the 22nd ASEAN-Japan Summit on Connectivity  
Promote digital connectivity, smart city development, and innovation to be widely applied in the society through platforms such as the ASEAN Smart Cities Network (ASCN), the Japan Association for Smart Cities in ASEAN (JASCA).

2020  
2nd ASEAN-JAPAN Smart Cities Network High-Level Meeting  
Japan launched the supportive measures called “Smart JAMP”.

2021  
3rd ASEAN-Japan Smart Cities Network High-Level Meeting  

• Study Implementation
  – Implement studies based on the needs of ASEAN countries and cities in order to form prospective projects
  – A master plan, a pre-feasibility study, a feasibility study, or a demonstration test as an outcome

• Financial Support
  – Loan by JBIC up to 200 billion yen in total
  – Equity investment by JOIN up to 50 billion yen in total

• Consultation
  – Designate secretaries in Japanese Embassies as advisors
  – Kind consulting accompanied by support from representatives of JICA, JETRO, JBIC and JOIN

• Contact Channel
  – Obtain information on technologies and solutions inside and outside Japan
  – Request for contact with Japanese companies
Study Implementation

• Study theme
  – Decided based on the request from 2 countries and 17 cities

• Two categories
  – 19 studies by cities and countries
    • City: Bandar Seri Begawan, Battambang, Phnom Penh, Siem Reap, Banyuwangi, DKI Jakarta, Luang Prabang, Vientiane, Johor Bahru, Kuala Lumpur, Kuching, Cebu City, Davao City, Bangkok, Chonburi, Phuket
    • Country: Cambodia, Malaysia
  – 10 studies by sectors
    • flood management and river management, evacuation behaviour, traffic congestion and safety, public transport system, energy-saving housing and building, energy system, waste reduction & reuse & recycle, sewage management, infrastructure operation & maintenance, urban development or environment improvement

• Current situation
  – Every study has begun.

• Schedule
  – To be completed by the end of March 2022
  – Briefing in March 2022
<table>
<thead>
<tr>
<th>Country</th>
<th>City</th>
<th>Theme</th>
<th>Outcome</th>
<th>Expected</th>
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<tbody>
<tr>
<td>Brunei Darussalam</td>
<td>Bandar Seri Begawan</td>
<td>i) public bus transport management, ii) waste management</td>
<td>pre feasibility study</td>
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<td>(country)</td>
<td>sewage management</td>
<td>master plan</td>
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<td>Cambodia</td>
<td>Battambang</td>
<td>i) master plan, ii) waste management</td>
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<td></td>
<td>Phnom Penh</td>
<td>smart bus shelters</td>
<td>feasibility study</td>
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<td>Siem Reap</td>
<td>road monitoring system based on CCTV</td>
<td>pre feasibility study</td>
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<td>Indonesia</td>
<td>Banyuwangi</td>
<td>master plan</td>
<td>master plan</td>
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<td></td>
<td>DKI Jakarta</td>
<td>multi-modal transportation</td>
<td>pre feasibility study</td>
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<tr>
<td>Lao PDR</td>
<td>Luang Prabang</td>
<td>i) master plan, ii) sewage treatment system</td>
<td>master plan &amp; pre feasibility study</td>
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<td></td>
<td>Vientiane</td>
<td>master plan</td>
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<tr>
<td>Malaysia</td>
<td>Johor Bahru</td>
<td>overloaded vehicle detecting system</td>
<td>feasibility study</td>
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<td>Kuala Lumpur</td>
<td>i) healthcare, ii) river environment monitoring system, iii) flood damage management system</td>
<td>feasibility study &amp; pre feasibility study</td>
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<td></td>
<td>Kuching</td>
<td>i) bicycle transportation, ii) urban observatory, iii) waste management</td>
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<td>the Philippines</td>
<td>Cebu City</td>
<td>mobility</td>
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<td>Davao City</td>
<td>traffic management, high-priority bus system</td>
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<td>Phuket</td>
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<td>Sector</td>
<td>Theme</td>
<td>Target Country</td>
<td>Target City</td>
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<td>Denpasar</td>
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<td>infrastructure operation and maintenance</td>
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<td>DKI Jakarta</td>
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<td>town development of net zero emission housing, vigilance system based on smart censor</td>
<td>Cambodia</td>
<td>Phnom Penh</td>
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Study on Battambang, Cambodia

- **Challenges**
  - Maintain safe and clean environment in the city center
  - Improve the promenade along the Sangal river
  - Waste management

- **Prospective projects**
  - City center renewal
  - Logistics center
  - Waste management

- **Outcome expected**
  - Master plan

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**City Center Area**
- Green City River Front Development Project (tentative)
  - Safe and Comfortable Pedestrian Way and Space (Smart Light, CCTV)
  - Traffic Management (Congestion Observation, Public Parking Development, Parking Usage Information System, etc.)
  - Landscape and Streetscape Rehabilitation and Enhancement with Heritage Building Utilization, Tourism Destination Development
  - Active Urban Space Creation with Safe, Clean and Open Markets

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**Transport Intersection**
- Boeng Raing Area Dry Port Development Project (tentative)
  - Logistics Center Development (Dry Port, Smart Logistics)
  - Industrial Center Development (Agro-Food Processing, etc.)

**Clean City Project (tentative)**
- Final Disposal (Land Fill) Site Development (location to be discussed)

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**Survey Target Area**

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**National Highway 5**

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**National Highway 5 Bypass**
(under construction)
Study on MaaS

• Target city
  – Hanoi, Viet Nam

• Challenges
  – Excessive motorcycle traffic in urban areas

• Target
  – On-demand bus transportation service

• Research Contractor
  – Bus transportation operator in Japan

• Technology to be applied
  – Match up a customer with a driver based on AI
  – Service operated in Tokyo and Kyoto

• Survey
  – Interview with customers and operators

• Outcome expected
  – Demonstration test
Study on Sewage Management

• Target city
  – Denpasar in Indonesia
  – Tourism destination & agricultural area

• Challenges
  – Impacts of COVID-19
  – Risks from new COVID-19 variants and new infectious diseases
  – Threats from pathogens and illegal drugs

• Task
  – Detect and monitor pathogens with pandemic potential
  – Improve the quality and coverage of pathogen surveillance
  – Gather, share and analyze data to identify pathogens

• Outcome expected
  – Feasibility study
  – Data platform

Study on Infrastructure Operation and Maintenance

• Target city
  – Jakarta in Indonesia, Singapore, Ha Noi in Viet Nam

• Challenges
  – Manpower shortage, unstable performance, cost and data storage & utilization in road inspection

• Technology
  – Road inspection system based on AI
  – Only a smartphone or a dashcam as a necessary device

• Experiment site
  – Roads and expressways

• Outcome expected
  – Demonstration test
Financial Support

• Loan by the Japan Bank for International Cooperation (JBIC)
  – Up to 200 billion yen in the aggregate
  – including loan with growth investment facility

• Equity investment by Japan Overseas Infrastructure Investment Corporation for Transport and Urban Development (JOIN)
  – Up to 50 billion yen in the aggregate
  – Investment for the project in the field of energy, communication facilities, waste, data collection & research as well as in the conventional field of transport and urban development

• ODA for highly public projects in developing countries
## Consultation

<table>
<thead>
<tr>
<th>Country</th>
<th>Advisor in Embassy of Japan</th>
<th>e-mail or tel.</th>
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</thead>
<tbody>
<tr>
<td>Brunei Darussalam</td>
<td>Ms. HORIUCHI, First Secretary</td>
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<td></td>
<td>Mr. KUWAE, Second Secretary</td>
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<tr>
<td>Cambodia</td>
<td>Mr. TOKIOKA, First Secretary</td>
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<td>Malaysia</td>
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<td>Viet Nam</td>
<td>Mr. TORIYAMA, Second Secretary</td>
<td><a href="mailto:keizaihan@ha.mofa.go.jp">keizaihan@ha.mofa.go.jp</a></td>
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Contact Channel

• Website of JASCA
  – Good practices of smart cities
    • Able to obtain information on good practices inside and outside Japan
    • Easy to find suitable examples which are classified by policy fields such as transport & mobility, energy, disaster prevention, infrastructure maintenance & operation, tourism, health & medical care, agriculture, environment, security & vigilance, logistics, urban planning, etc.
    • Additional information about the technologies & solutions which are employed in each smart city
  – List of technologies and solutions
    • Able to obtain information on what kind of technologies and solutions are utilized, where they are applied, etc.
    • Easy to find suitable examples which are classified by policy fields
    • Easy to contact with the companies for which you entertain concern
  – Supportive measures to be utilized

• Schedule
  – Open by February 2022
Guidebook

• Current situation
  – Began interviews on the problems and demands of each country and city in October

• Outline
  – Basic concepts
  – Basic principles
  – Categories
  – Development stage
  – Enablers

• Schedule
  – First draft in late October or early November
  – Revise the draft and circulate it in late November or early December
  – Finalize and release the guidebook by the end of this year
  – Briefing in January or February
Basic Concepts and Basic Principles

**Oriented to Citizen and User Demands**
Enhancing well-being of citizens for their benefit through their conduct

**Focusing on Issues and Visions**
Concentrating on resolving actual problems in order to realize visions, not on creating new technologies nor applying the existing technologies as they are

**Co-operation across Sectors and Cities**
Collaborating among different sectors and cities in order to resolve complicated problems beyond boundaries, including data linkage

**Fairness and Inclusiveness**
All citizens are able to equally benefit from smart city services and all entities are able to participate in developing smart city

**Privacy**
It is required to ensure privacy of citizens when utilizing personal data

**Sustainability in Terms of Operation and Finance**
It is necessary to ensure sustainability in operation and finance for sound and feasible smart city suitable for local community

**Security and Resiliency**
It is vital to ensure security and resiliency, i.e., protect privacy and prepare for disasters and other emergencies

**Interoperability, Openness and Transparency**
It is essential to ensure interoperability functions in urban OS, open data distribution environment, and transparency in decision-making process
Categories

• Six categories: i) civic & social, ii) health & well-being, iii) security, iv) environment, v) infrastructure, vi) industry & innovation

• Correspond to the priority areas of ASEAN sustainable urbanisation strategy
Development Stages

• Initial phase
  – Clarify the objectives of smart city development
  – Create common understanding about them among people concerned.

• Preparation phase
  – Establish partnership of stakeholders to promote the projects

• Planning phase
  – Identify necessary activities
  – Organize a promoting body

• Demonstration and Implementation phase
  – Verification
  – Flexibility

• Establishment and development phase
  – Monitor, evaluate and improve
Enablers

• Vision
  – Clarify and share the vision to promote in the same direction based on common understanding

• Development organizations
  – Involve diverse people and organizations with different values, viewpoints and interests
  – Designate a promoter and a co-ordinator

• Financial sustainability
  – Identify direct and indirect beneficiaries
  – Distinguish between public and private goods

• Citizen participation
  – Arise concern and deepen understanding
  – Interactive dialogue

• Digital infrastructure
  – Co-operation among sectors and cities

• Evaluation & key performance indicators
  – Measurable and practicable
• 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.
A new regional development project being conducted since 2017 demonstrates sewage system development in Cambodia, Indonesia, and the Philippines. By employing Japanese technologies, the project aims to improve the environment and water supply and drainage systems. As of the end of 2019, more than 30,000 households have been connected to this system, contributing to the amelioration of public health and water environment improvement.

As part of the development of smart cities, Panasonic in Japan conducted a smart city project in Bumi Serpong Damai, Indonesia, with the New South Wales Government and the following Japanese companies: Keikyu Corporation, Nippon Railroad Co., Ltd., and Sumitomo Mitsui Banking Corporation (SMBC) on business cooperation regarding infrastructure, transport and tourism. Mitsubishi Corporation, Mitsubishi Heavy Industries on the proposal for energy management Partnership (AWaP). Mitsubishi Corporation and JOIN will jointly invest and participate in the Bumi Serpong Damai smart city project. The Joint Crediting Mechanism (JCM) is also used to promote carbon dioxide reductions through the promotion of energy efficiency and the amelioration of public health and water environment improvement.

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.

Panasonic Corporation in Japan conducted a smart city project in the city of Denpasar based on the “FiguSawa Sustainable Smart Town”. Achieving efficient energy use by taking advantage of advanced technologies of pilot systems including microgrids (distributed power generation networks) and smart LED streetlights.

The goal is to achieve sustainable urban development using ICT.

Efficient energy use by Panasonic in Denver, U.S.

- Efficient energy use by Panasonic in Denver, U.S.
- Development around the new Western Sydney Airport in Australia
- A new urban development promoted by the New South Wales Government in Australia along with 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.
- JICA’s overseas 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 Aerodromes Authority (WCAA).
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