

Japan's Support for Smart City Development in ASEAN

- Progress of Smart JAMP and Guidebook -

YOKOTA Masafumi

Deputy Minister for International Projects,
Ministry of Land, Infrastructure, Transport and Tourism
Government of Japan

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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 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

Country	City	Theme	Outcome Expected
Brunei Darussalam	Bandar Seri Begawan	i) public bus transport management, ii) waste management	pre feasibility study
Cambodia	(country)	sewage management	master plan
	Battambang	i) master plan, ii) waste management	master plan
	Phnom Penh	smart bus shelters	feasibility study
	Siem Reap	road monitoring system based on CCTV	pre feasibility study
Indonesia	Banyuwangi	master plan	master plan
	DKI Jakarta	multi-modal transportation	pre feasibility study
Lao PDR	Luang Prabang	i) master plan, ii) sewage treatment system	master plan & pre feasibility study
	Vientiane	master plan	master plan

Country	City	Theme	Outcome Expected
Malaysia	(country)	overloaded vehicle detecting system	feasibility study
	Johor Bahru	i) healthcare, ii) river environment monitoring system, iii) flood damage management system	feasibility study & pre feasibility study
	Kuala Lumpur	i) bicycle transportation, ii) urban observatory, iii) waste management	pre feasibility study
	Kuching	i) blockchain, ii) monitoring system for disaster and traffic management	pre feasibility study
the Philippines	Cebu City	mobility	feasibility study
	Davao City	traffic management, high-priority bus system	pre feasibility study
Thailand	Bangkok	transit-oriented development around Bang Sue central station	feasibility study
	Chonburi	i) 4K broadcasting, ii) 5G manufacturing, iii) smart bus	feasibility study
	Phuket	MaaS	demonstration test
Viet Nam	Da Nang	i) digital map, ii) bicycle transportation, iii) tourism, vigilance	pre feasibility study

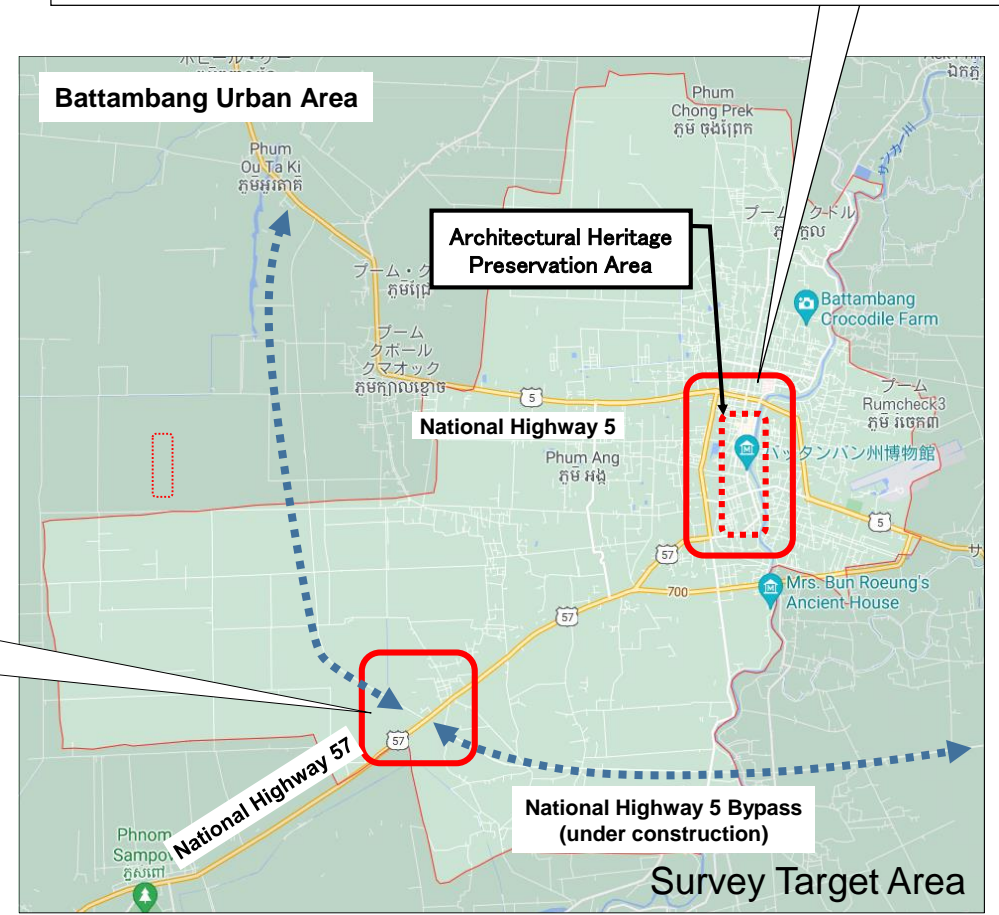
Sector	Theme	Target Country	Target City
flood management and river management	water level monitoring, landslide detection	Cambodia	Battambang
		Cambodia	Siem Reap
		Malaysia	Kuching
		the Philippines	Davao City
		Viet Nam	Da Nang
		Viet Nam	Ho Chi Minh City
evacuation behaviour	disaster information broadcasting	the Philippines	Manila
		Indonesia	DKI Jakarta
traffic congestion and safety	traffic data analysis, traffic management	Thailand	Phuket
public transport system	MaaS	Viet Nam	Ha Noi
energy-saving housing and building	zero emission housing, automatic control on lighting and air-conditioning	Cambodia	Phnom Penh
energy system	district cooling and heating, smart grid	Indonesia	Makassar
waste reduction, reuse and recycle	waste power generation, waste disposal	the Philippines	Santa Lucia
sewage management	waste water surveillance to detect and monitor pathogens	Indonesia	Denpasar
infrastructure operation and maintenance	road diagnosing system based on image analysis technology, high definition road information, road management system	Indonesia	DKI Jakarta
		Viet Nam	Ha Noi
		Singapore	-
urban development or environment improvement	town development of net zero emission housing, vigilance system based on smart censor	Cambodia	Phnom Penh ₇

- 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

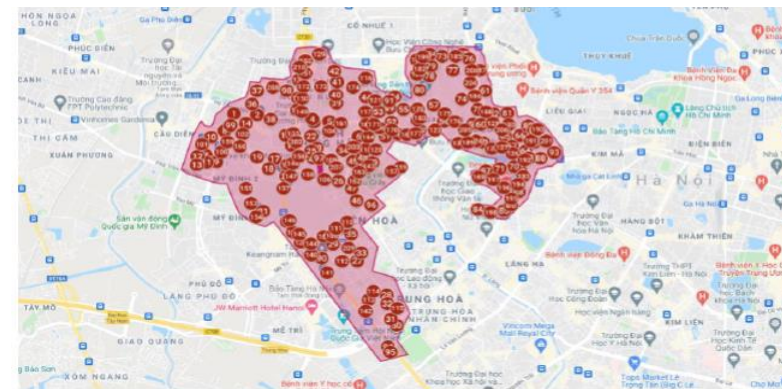
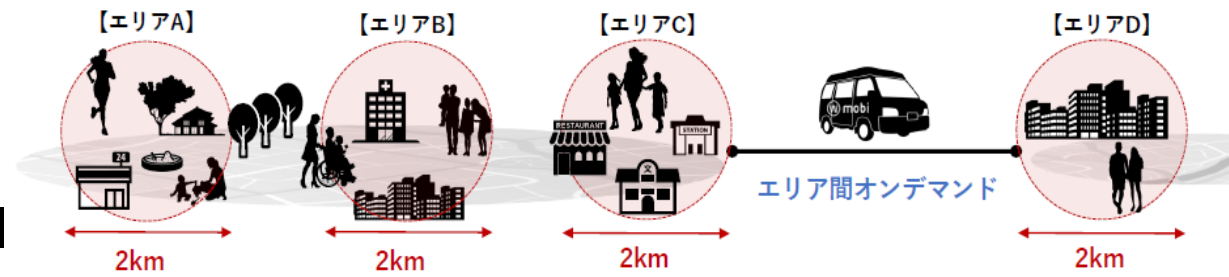
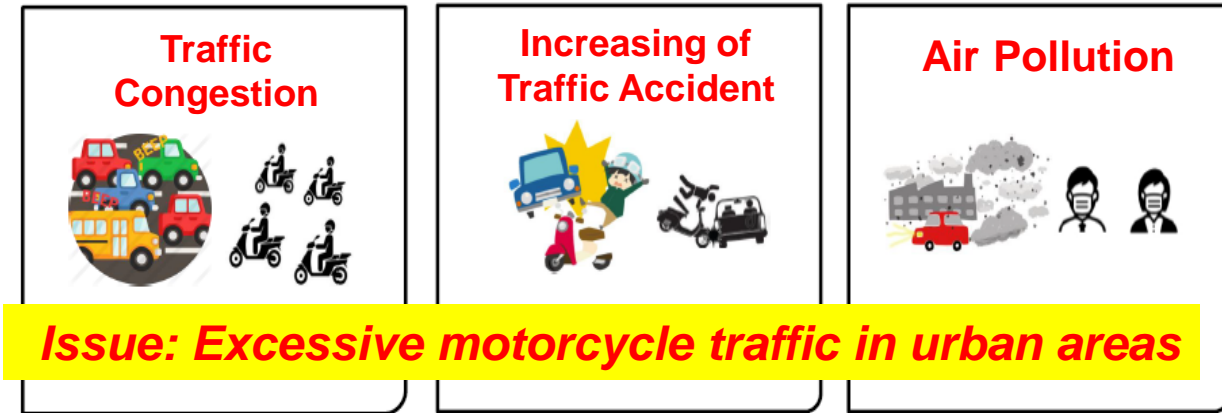
-- City Center Area --
Green City River Front Development Project (tentative)
+ Safe and Comfortable Pedestrian Way and Space (Smart Light, CCTV)
+ Traffic Management (Congestion Observation, Public Parking Development, Parking Usage Information System, etc.)
+ Landscape and Streetscape Rehabilitation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

-- 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)



- 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



- 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



Image: <https://www.shimadzu.co.jp/news/press/04cu1puvui43bpno.html>

- 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



- 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

Country	Advisor in Embassy of Japan	e-mail or tel.
Brunei Darussalam	Ms. HORIUCHI, First Secretary	embassy@bw.mofa.go.jp
	Mr. KUWAE, Second Secretary	
Cambodia	Mr. TOKIOKA, First Secretary	eco.ipn@pp.mofa.go.jp
Indonesia	Mr. TAKASE, Second Secretary	support-japan100@dj.mofa.go.jp
Lao PDR	Mr. ISHIDA, Second Secretary	oda@vt.mofa.go.jp
Malaysia	Mr. SAITO, Second Secretary	business@kl.mofa.go.jp
		+60-3-2177-2713
Myanmar	Mr. IWANAGA, Second Secretary	eco@yn.mofa.go.jp
the Philippines	Mr. MATSUBARA, Second Secretary	nikkeikigyo.phil@ma.mofa.go.jp
Singapore	Mr. MATSUSHIMA, First Secretary	+65-6235-8855
Thailand	Mr. SEKIZAWA, Second Secretary	business-support@bg.mofa.go.jp
Viet Nam	Mr. TORIYAMA, Second Secretary	keizaihan@ha.mofa.go.jp

- 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

- 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

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

Three Basic Concepts

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

Five Basic Principles

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

Interoperability, Openness and Transparency

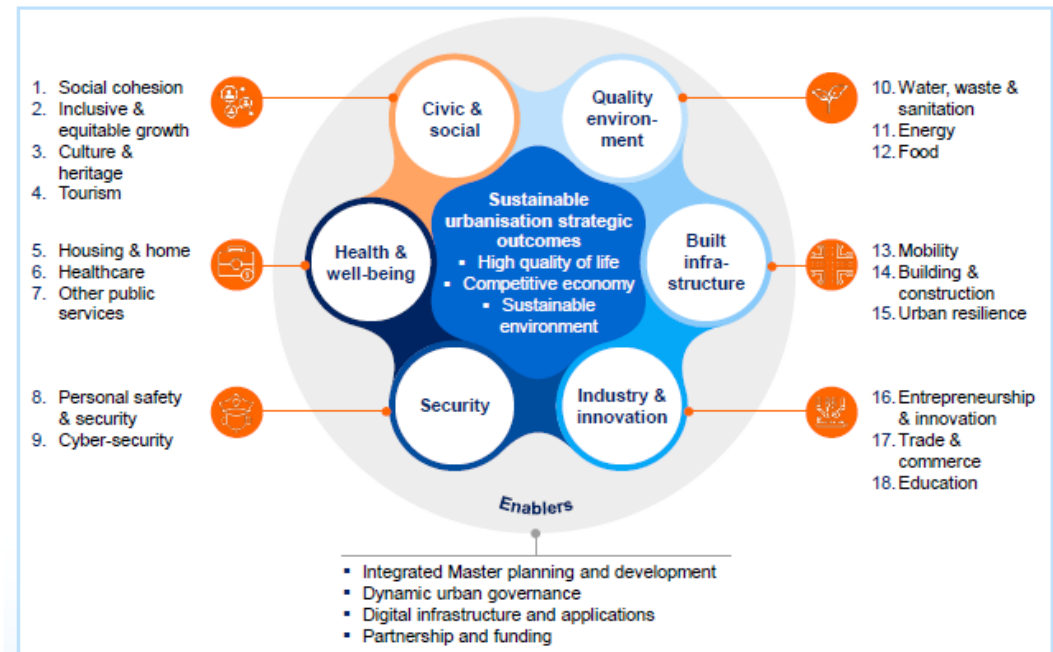
It is essential to ensure interoperability functions in urban OS, open data distribution environment, and transparency in decision-making process

Security and Resiliency

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

- 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

The strategy employs a framework of sustainable urbanisation centred around 6 areas and 18 sub-areas



SOURCE: Centre for Liveable Cities (CLC), Team analysis

Source: ASEAN Sustainable Urbanisation Strategy

- 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

- 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 promotor 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.

Examples of Overseas Smart City Development by Japan

Blue: Infrastructure development
Red: Digital technology Utilization

Promoting Japanese-style education by using digital teaching materials

- Providing "Surala Ninjal," a digital learning material for learning arithmetic while interacting with cartoon characters.
- Promoting the acquisition of independent learning habits and the improvement of scholastic ability for elementary school students. (Sri Lanka)



Pilot operator: SuRaLa Net Co., Ltd.

Conduct teacher training program on English teaching methods by using Japanese digital teaching materials and ICT at a national teacher training center based on co-operation between industries and academics. (Cambodia)

Pilot operator: Uchida Yoko Co., Ltd.



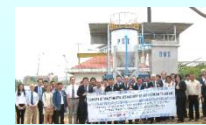
Independent wastewater treatment facilities, "Johkasou" – an excellent technology by Japan

As of the end of 2019, more than 30,000 "Johkasou" have been installed overseas, contributing to amelioration of public health and water environment improvement.



Sewage system development in Cambodia, Indonesia, Myanmar, the Philippines, Vietnam

- Established the Asia Wastewater Management Partnership (AWaP).
- Since 2017, conducted demonstrations of sewerage technology.
- Japanese technologies are employed to create local standards, e.g. operation and management based on ICT.
- Co-operation among industries, academics and governments has contributed to the spread of sewerage systems.



Public safety by NTT 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.



(Image: NTT)

Transit-oriented development in Northern Hanoi, Vietnam

- development of 272 hectares around the new station, composed of hospitals, schools, commercial facilities, greenery areas, disaster prevention facilities, security system.
- Upgrade urban services through 5G, face authentication system, block chain.

Demonstration in Vietnam

Co-operation in the development of smart city evaluation indicators

Urban complex development in Binh Duong, Vietnam

- Feasibility Study on the development of railways, stable power supply and communication network infrastructure
- Tokyu Corp. introduced smart home system and MaaS, e.g. on-demand bus and small shared mobility.

Amata Smart City in Chonburi, Thailand

- Yokohama city and Yokohama Urban Solution Alliance co-operate with a local conglomerate to digitalize existing industrial parks and to develop a new smart city.

Transit-oriented development around Bang Sue Station in Bangkok, Thailand

- Redevelopment of 372 hectares around the terminal station for airport rail, urban railways, high-speed railway.
- Japan integrated & improved multiple master plans prepared by Thai organizations.

High-Efficiency LED Streetlights Using Wireless Networks in Cambodia

- The installation of LED streetlights in various places from emerging cities to World Heritage sites saves 70% of energy consumption.
- Building a basis of a smart city by establishing wireless network infrastructure through the installation of LED streetlights.



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

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 houses in a part of a large development area, southwest of Jakarta.

Delta Mas City in Indonesia

- Sojitz Corporation is developing commercial, residential and educational facilities in an area of 1,464 acres in the east of Jakarta.
- Showcase for smart technologies and services by using IoT and AI.

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

- 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 to Indonesia.
- The development site is also expected to serve as an evacuation site in the event of a disaster, which promotes strong consciousness against disasters.



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

Redevelopment 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.

Data Utilization in U.S.

Expansion of coverage of data utilization model

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.
- 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).

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

- Panasonic Corporation in Japan conducted a smart city project in the city of Denver based on the "Fujisawa Sustainable Smart Town".
- 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)

ICT solution demonstration in Central and South America

Research and demonstrations aimed at expanding the coverage of ICT solutions that promote smart cities in small and medium-sized cities (targeting Chile, Colombia, Argentina, etc.)

Thank you for your attention.