

14<sup>th</sup> ATRANS Annual Conference on “Transportation for a Better Life”

# Smart Cities in Japan

## ～ Achievements and Challenges ～

2021.12.18

ISHIDA Haruo, Dr. Eng.

Professor Emeritus, The University of Tsukuba  
Chair, Japan Research Institute of Roads and Streets

# Self Introduction



- ISHIDA Haruo Dr. of Engineering
  - Prof. Emeritus, the University of Tsukuba
  - Chair of the Board, Japan Research Institute of Roads and Streets
- Profile
  - 1951 Born in Osaka
  - 1974 Graduated at the Dept. of Civil Engineering, Tokyo Univ.
  - 1978 Assistant Prof. at Dept. of Civil Engineering, Tokyo Institute of Technology
  - 1982 Prof. at Institute of Social Systems and Management, the University of Tsukuba
- Public services
  - Cabinet Office
    - Member of Committee on Green Innovation Strategy Development and Driving
    - Chair of Committee on Smart City Guide Book
  - Ministry of Land, Infrastructure, Transport and Tourism
    - Chair of Advisory committee on SMART JAMP
    - Chair of Committee on Road Policy , Infrastructure Policy Council
  - Ministry of Economy, Industry and Trade
    - Member of Council on Industry Policy
    - Member of Committee on Autonomous Driving Business

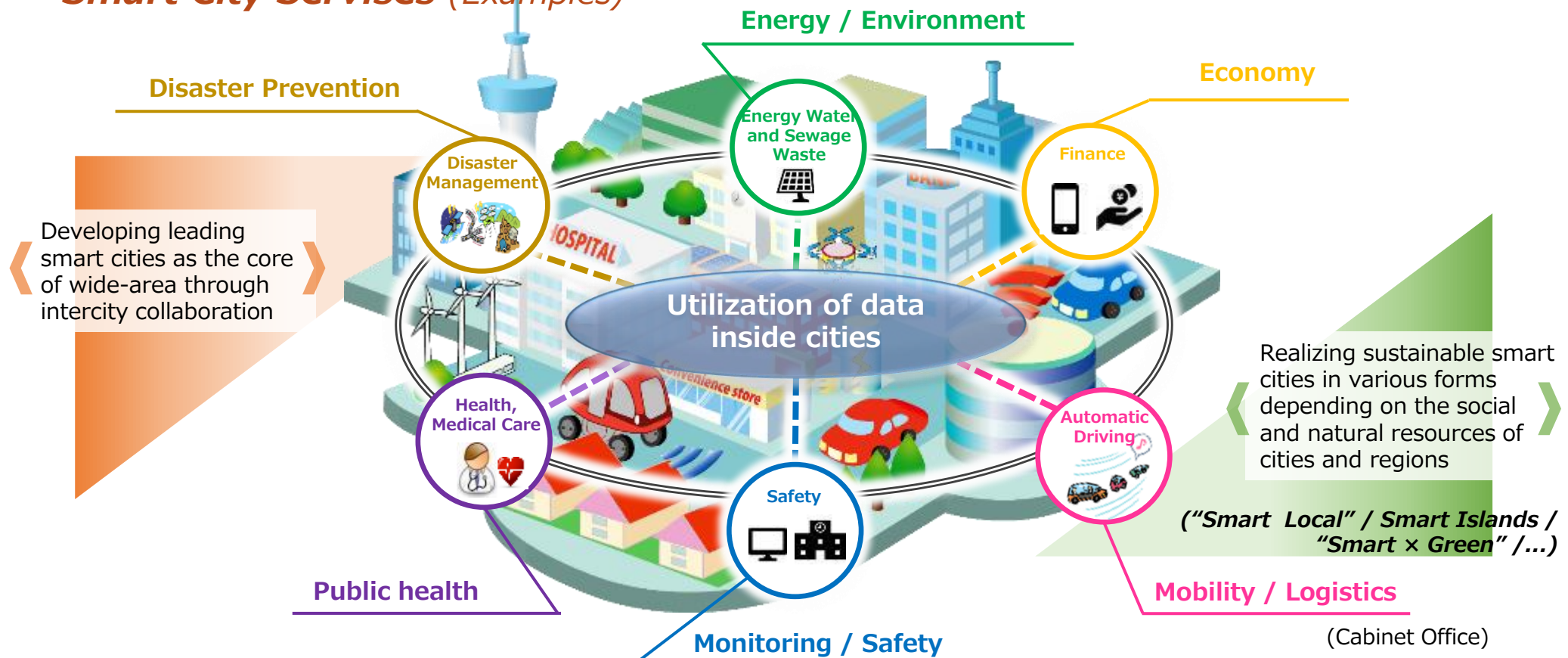
# What's "Smart City" ?



## Smart City is:

- An initiative to solve urban & regional problems and create new value by utilizing advanced technology & management
- A comprehensive showcase of Society 5.0

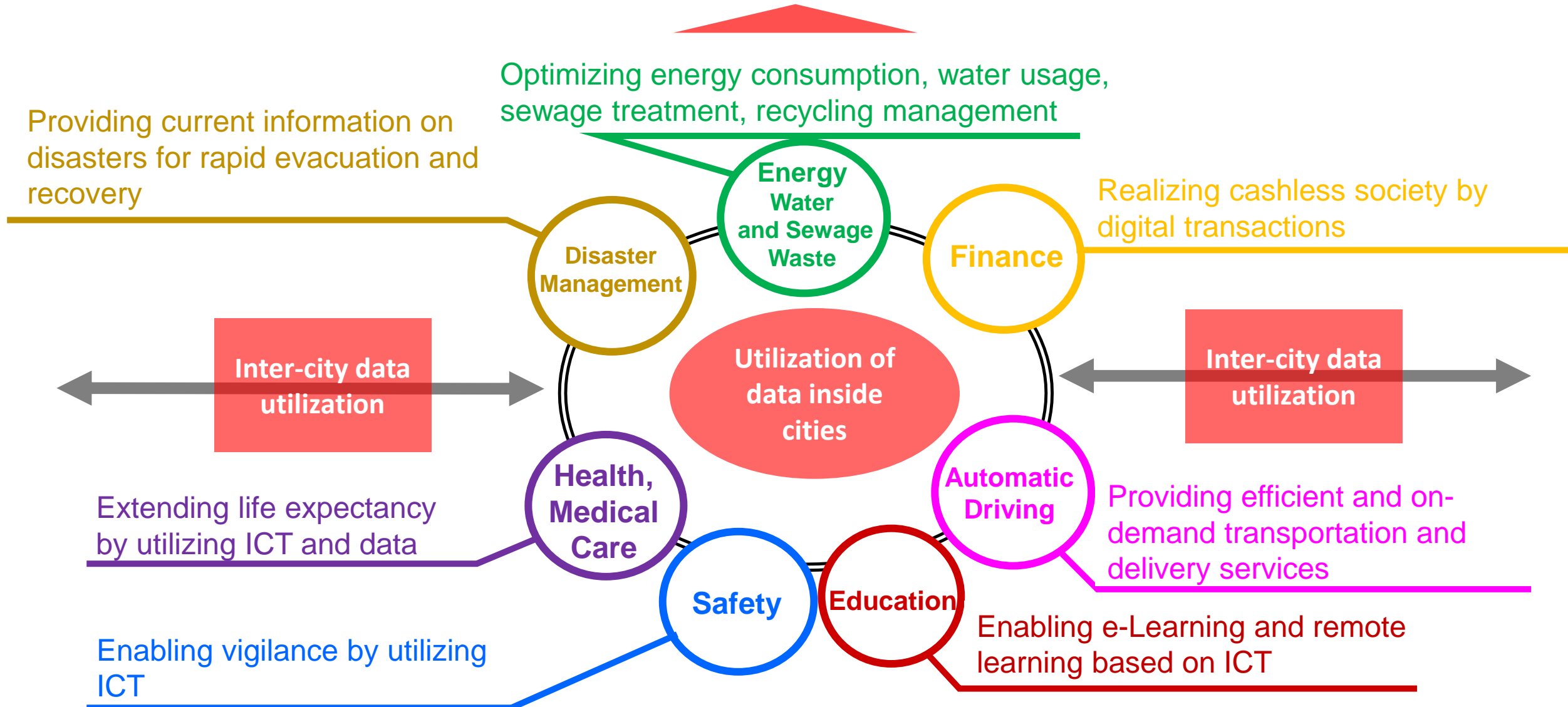
### Smart City Services (Examples)



Steps:



## Enhancing well-being of citizens



# Basic Concepts and Principles of Smart City in JAPAN



## 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

### 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 Funding

It is necessary to ensure sustainability in operation and funding 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

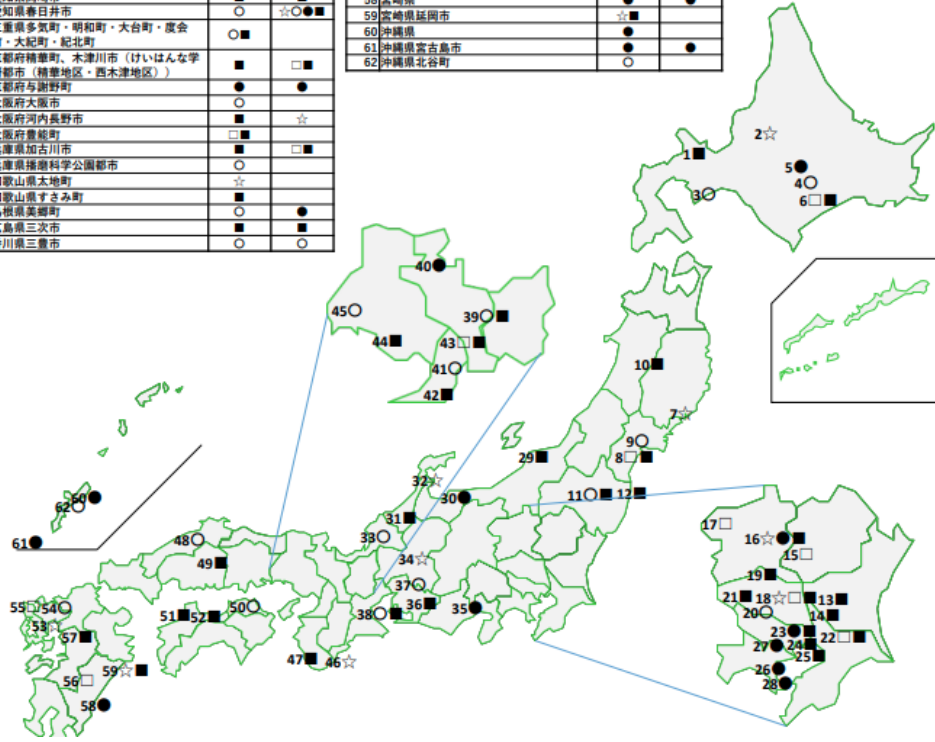
# Smart City Projects in 2021



項目	プロジェクト実施地域	選定事業	過年度選定	項目	プロジェクト実施地域	選定事業	過年度選定	項目	プロジェクト実施地域	選定事業	過年度選定
1	北海道札幌市	■	□●■	29	新潟県新潟市	■	○■	51	愛媛県松山市	■	■
2	北海道旭川市	☆	■	30	富山県朝日町	●	■	52	愛媛県新居浜市	■	□■
3	北海道室蘭市	○	■	31	石川県加賀市	■	□●■	53	佐賀県糟野市	☆	■
4	北海道帯広市	○	●	32	石川県中能登町	☆	■	54	佐賀県基山町	○	■
5	北海道芽室町	●	■	33	福井県永平寺町	○	○■	55	長崎県	□	■
6	北海道厚別村	□■	☆	34	岐阜県中津川市	☆	■	56	熊本県人吉市	□	■
7	宮城県仙台市	☆	■	35	静岡県静岡市	●	○●	57	熊本県荒尾市	■	■
8	宮城県仙台市	□■	■	36	愛知県岡崎市	■	■	58	宮崎県	●	■
9	山形県東区常光台・八乙女地区	○	■	37	愛知県春日井市	○	☆○●■	59	宮崎県延岡市	☆	■
10	秋田県仙北市	■	☆	38	三重県多気町・明和町・大台町・度会町・大紀町・紀北町	○	■	60	沖縄県	○	■
11	福島県会津若松市	○■	□○●	39	京都府精華町・木津川市(けいはんな学研都市(精華地区・西木津地区))	■	□■	61	沖縄県宮古島市	○	●
12	福島県南相馬市	■	■	40	京都府与謝野町	○	●	62	沖縄県北谷町	○	■
13	茨城県つくば市	■	●■	41	大阪府大阪市	○	■				
14	茨城県守谷市	■	■	42	大阪府河内長野市	○	☆				
15	栃木県佐野市	□	■	43	大阪府豊能町	□■	■				
16	群馬県前橋市	☆●■	○●■	44	兵庫県加古川市	■	□■				
17	群馬県碓氷村	□	□■	45	兵庫県播磨科学公園都市	○	■				
18	埼玉県さいたま市	☆■	□■	46	和歌山県太地町	☆	■				
19	埼玉県熊谷市	■	■	47	和歌山県すさみ町	■	■				
20	埼玉県入間市 富寺・二本木、東金子、余子、勝沢第一・第二エリア	○	■	48	島根県美郷町	○	●				
21	埼玉県毛呂山町	■	■	49	広島県三次市	○	■				
22	千葉県柏市	□■	■	50	香川県三豊市	○	○				
23	東京都千代田区(大手町・丸の内、有楽町地区)	●■	■								
24	東京都港区(竹芝地区)	■	■								
25	東京都大田区(羽田空港跡地第1ゾーン)	■	□■								
26	山手線周辺/横須賀市	●	■								
27	川崎市、稲根町	●	○●								
28	神奈川県横浜須賀野、三浦市	●	●								

内閣府「未来技術社会実装事業」	☆
総務省「データ連携促進型スマートシティ推進事業」※1	□
経済産業省「地域新MaaS創出推進事業」	○
国土交通省「日本版MaaS推進・支援事業」※2	●
国土交通省「スマートシティモデルプロジェクト」	■

※1令和2年度までの実施名は「データ活用型スマートシティ推進事業」  
 ※2令和元年度の実施名は「新モビリティサービス推進事業」



## FACTS

Assistance are given to 62 projects in 42 cities

### Project Category

- METI: MaaS, MLIT: MaaS, MLIT: Smart City, MCI: Smart City, CO: Future Technology

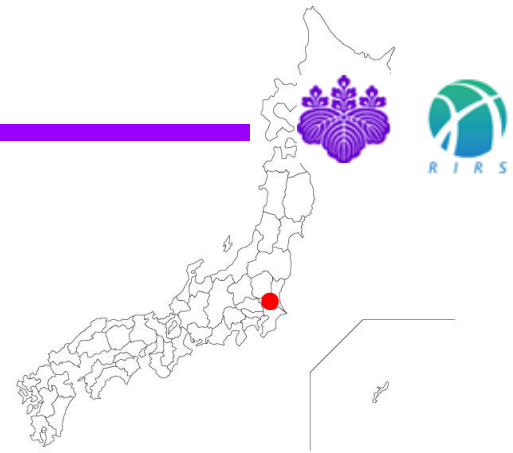
## Achievements

Good cooperation/collaboration between Local gov. and National gov.

- Local Needs, Problems based
- National Financial, Technical and Human resource assistance
- Platform for sharing needs, problems and results

300+ consortiums to discuss, plan and implement Smart City Projects across Japan

# Comprehensive Smart City Aidzu Wakamatsu



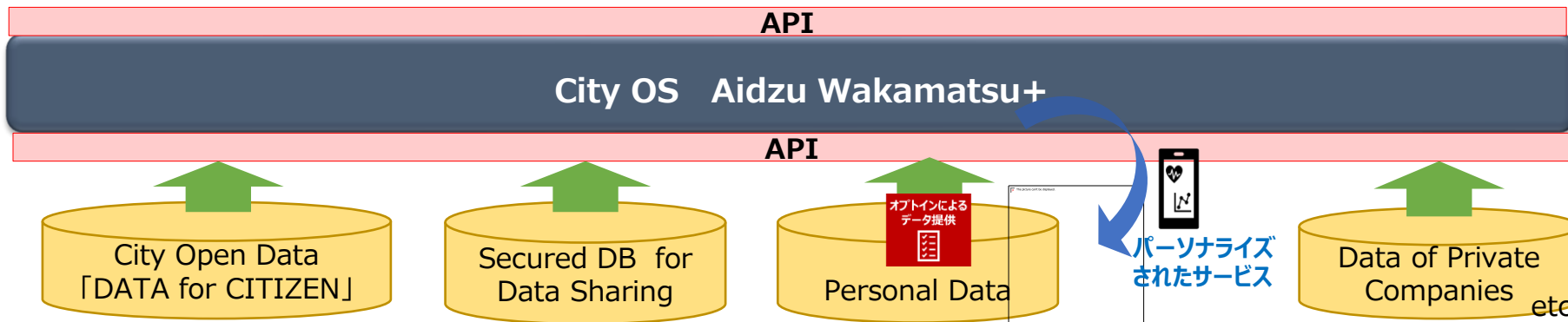
Wide varieties of Services

Collaboration among various Stakeholders

City OS

Pop. 121,000

Area 383km<sup>2</sup>



Source  
Aidzu Wakamatsu City  
Modified by Ishida

# EBPM City Management Maebashi

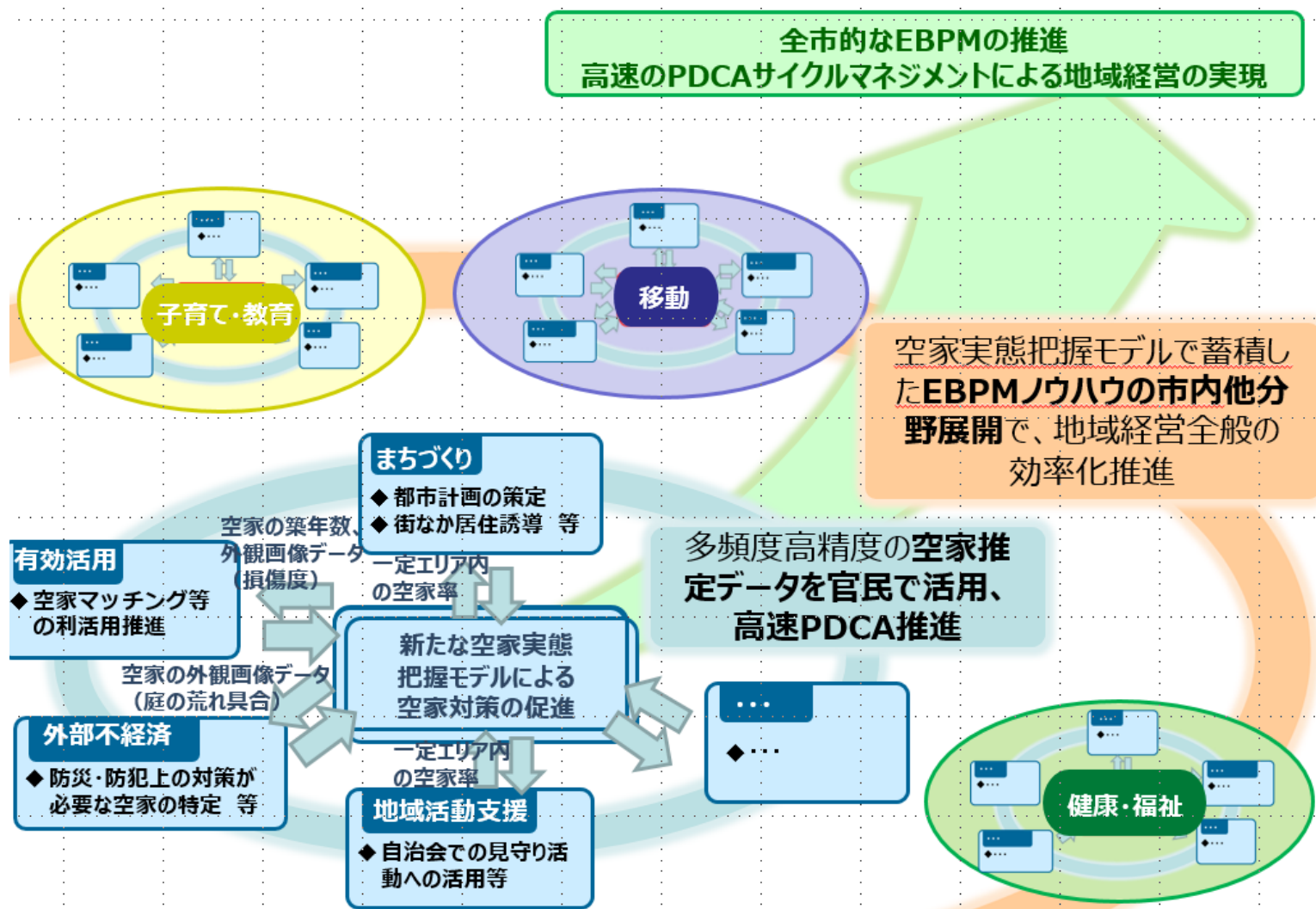
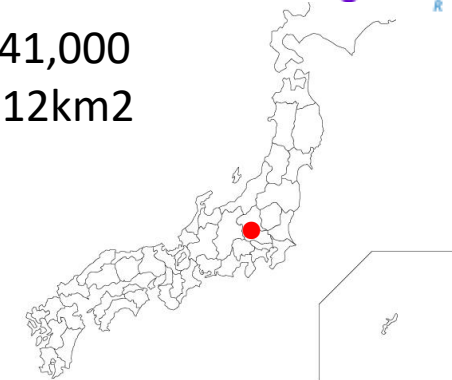


## Evidence-based Policy Making and Fast PDCA Cycle Management

Urban Regeneration, Healthcare, Community activities,...

Pop. 341,000

Area 312km<sup>2</sup>



Source Maebashi city

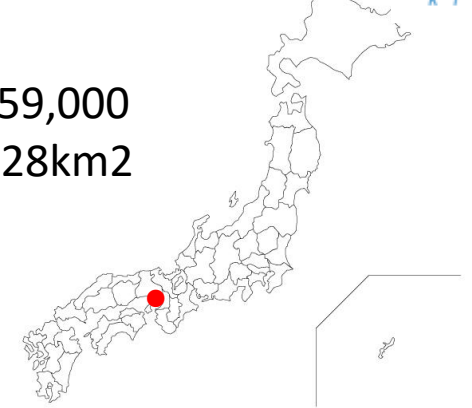


# Protecting Citizens against Disasters, Accidents and Crimes Kakogawa

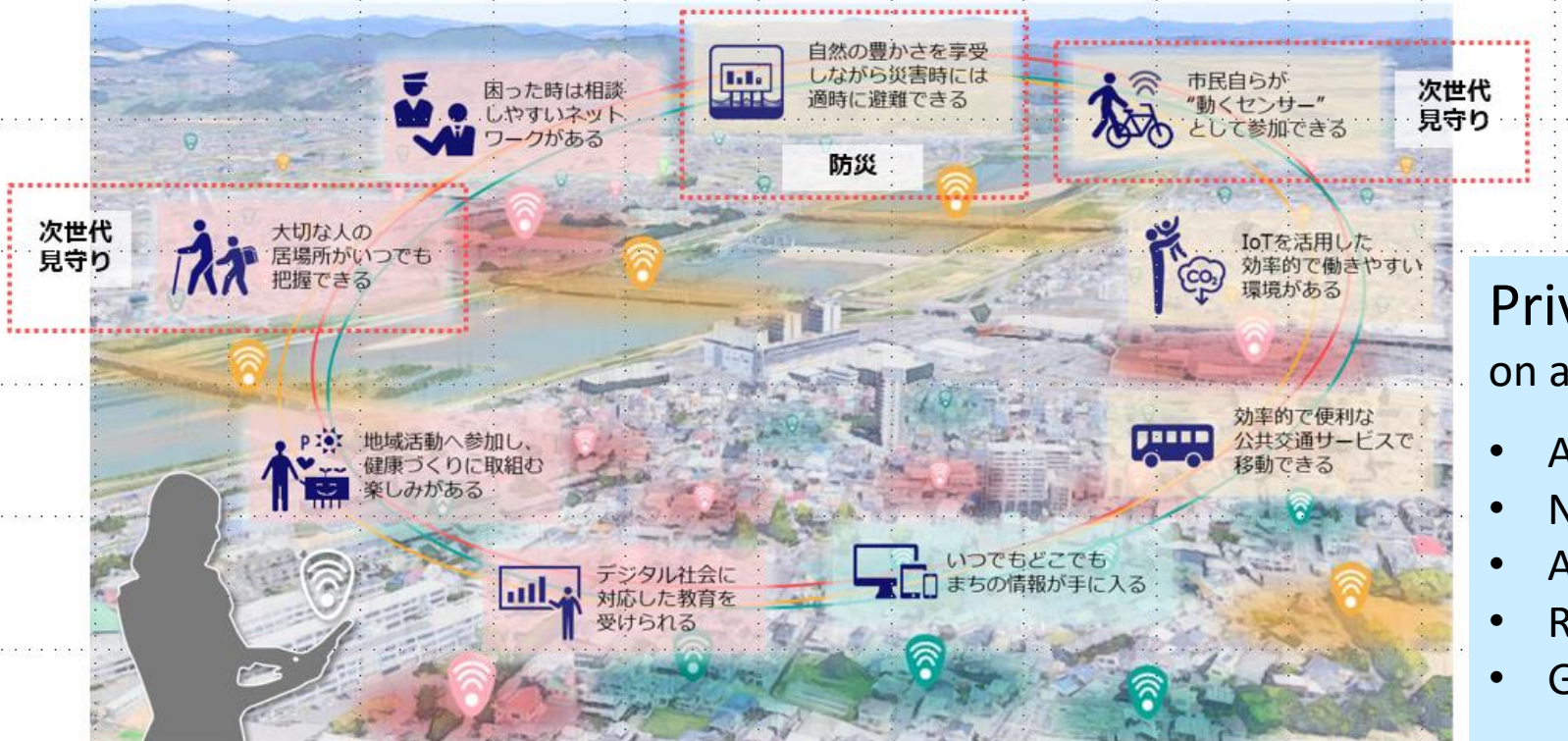


Disaster prevention/ Resilience  
Warm watch over elderly peoples and children

Pop. 259,000  
Area 128km<sup>2</sup>



【市民】市民のQOLや利便性を向上するサービス 【まち】都市機能の強化や都市課題の解決 【行政】デジタル行政の推進



## Private observation on achievements in 3 cities

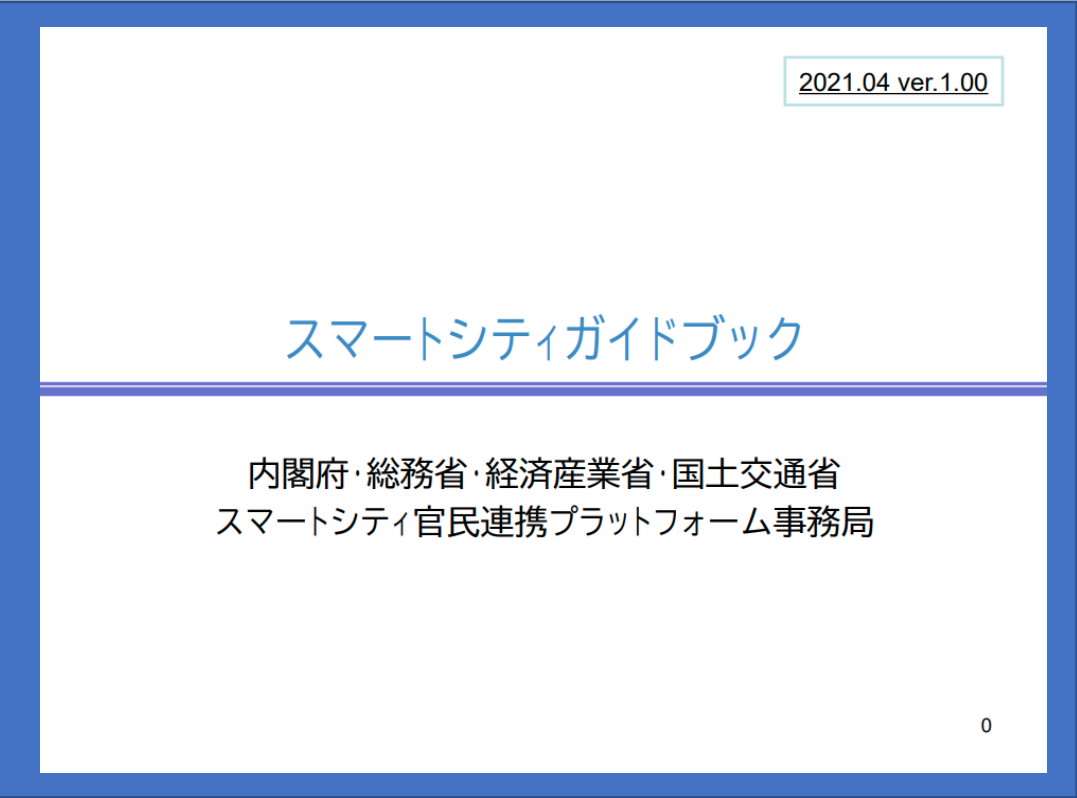
- Ambitious visions
  - Needs/Problems driven
  - Active/close co- working in teams
  - Rich technologies and products are available
  - Good Leader/ Architect
- 
- In many Smart Cities various, various things are tried, achieved and failed
  - These experiences and lessons are shared through the Smart City Platform

# Possible Scene of Smart City Attempt

---



- A mayor wants to make his/her city better through SAMRT CITY Concept and request staff to develop plans.
- The easiest way for staff is to follow the technical/ methodological way : **Smart City Flavor** and to employ IT consultant.
- But, this is definitely not right ways.
- Smart City should aim at solving urban/regional problems, being human-oriented, being demand/needs oriented and so on.
- We have developed two Guidebooks to reduce this kind of misunderstanding and to assist right attempts.
  - **Smart City Guidebook**
  - **Smart City Reference Architecture Guidebook**



- To extend the significances and needs of SMART CITY
- To encourage and support local public organizations, consortiums by providing them basic ideas, theories, methods and good/advanced practices

SMART CITY is not only for Special Areas such as center of metropolis, but for any places including rural/local areas



Easy to read  
Technical Assistance  
to develop Smart City  
OS

English version will come soon

# Five Important Points of SMART CITY Projects

---



- Building Functional and Flexible Driving Entities **Organizations**
  - Ensuring Financial Sustainability **Financial Power**
  - Proactive Citizen Involvement **Public Acceptance and Support**
  - Introduction of City OS **ICT**
  - Appropriate monitoring and evaluation of Project **Evaluation and Fast PDCA**
- 
- Good practices and examples of these 5 points are given in this Samar City Guidebook

# Challenges and Collaboration with ASEAN Cities



- Japanese cities, ASEAN cities and world cities have been trying to achieve many objectives; improvement of well-being, resilience, attractiveness, mobility services, city management, economic vitality, ...
- SMART CITY can be quite powerful tool. We should collaborate further to produce, increase and share rich fruit of SAMRT CITY

## Smart JAMP      Smart City supported by Japan-ASEAN Mutual Partnership

- Implementation of concrete smart city project formation
- Promotion of financial support for ASEAN smart city proposals
- Strengthening support for smart city in ASEAN countries
- Smooth information sharing and mutual cooperation through JASCA homepage
- **Smart JAMP is very important for Japan, too.**
  - **To mobilize Japan**
  - **To widen, deepen and strengthen Mutual Partnership, Trust and Friendship**
  - **To synchronize development of Japan with ASEAN countries**

We will go foreword  
**STRONGLY and TOGETHER!!**

Thank you for your attention