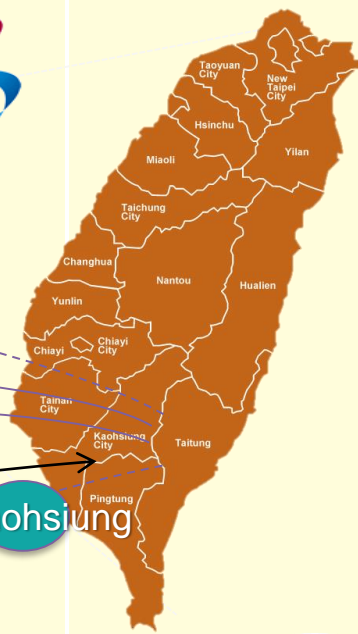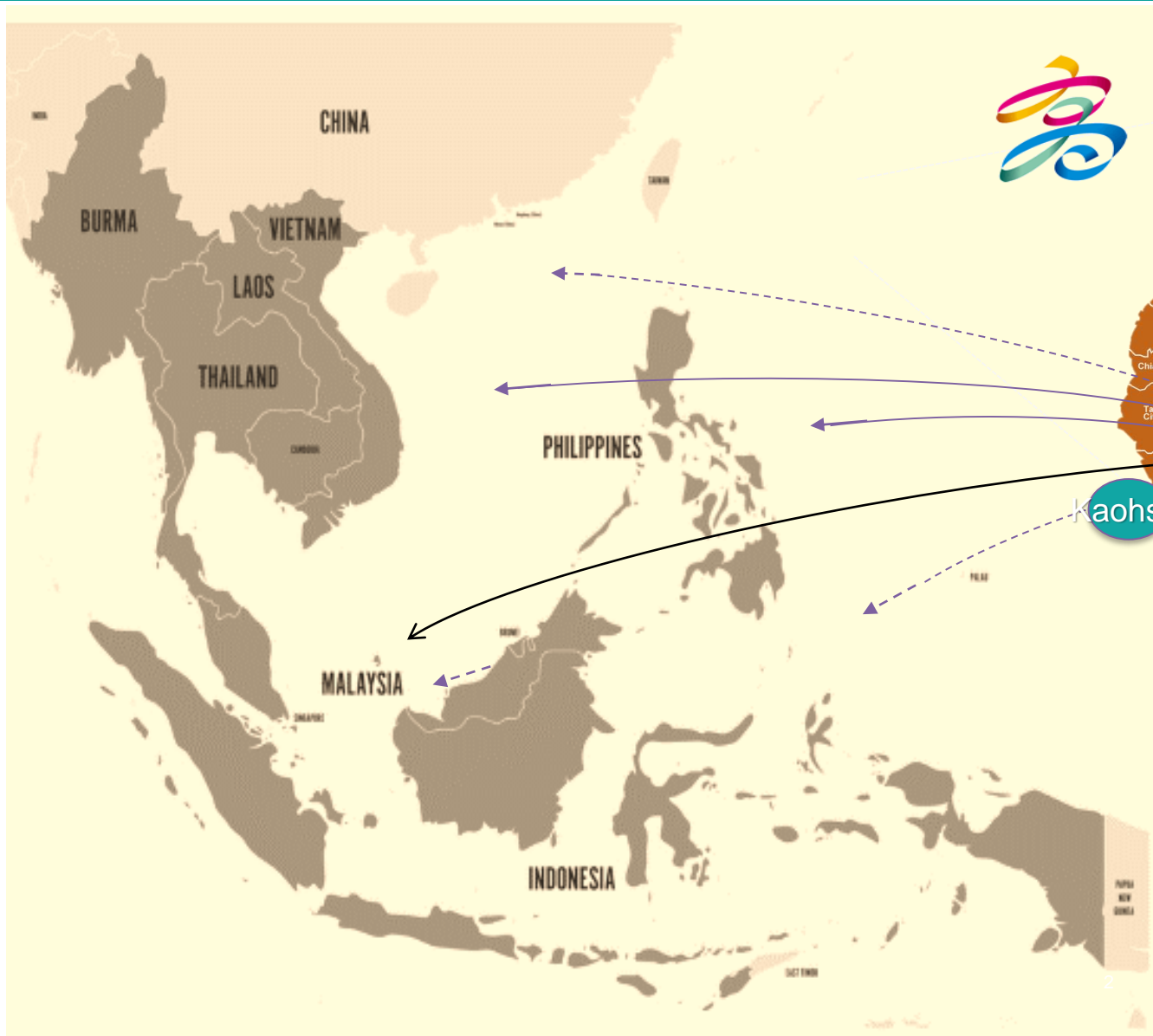# Kaohsiung Smart City Development Vision

KAOHSIUNG
SmartCity

Charles Lin
Deputy Mayor
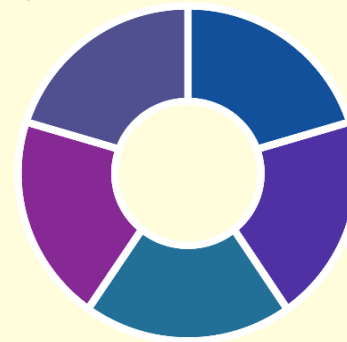Kaohsiung City, Taiwan

Kaohsiung at a Glance

Population:
2.77 Million

Area:
2,952 km^2

Major Industries:

- Manufacturing (
- Tourism Industry
- Somatosensory
- Advanced Technology
- Agriculture and Fishery

Kaohsiung's advantages in developing a smart city

|	
Diversified geography and industry	Suitable for experiment and realization field of various innovative applications
Asia New Bay Area	The largest 5G AIoT innovation test field in Taiwan, an important location to attract corporate investment
Qiaotou Science Park	Link Southern Taiwan Science Park and Luzhu Science Park to form a southern science and technology corridor
International Sea and Air Port	Smart products and services can be exported quickly and efficiently

Digital industry/Smart City
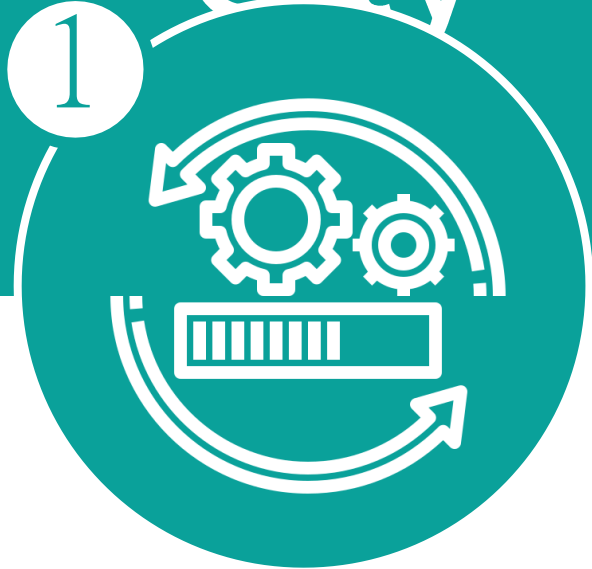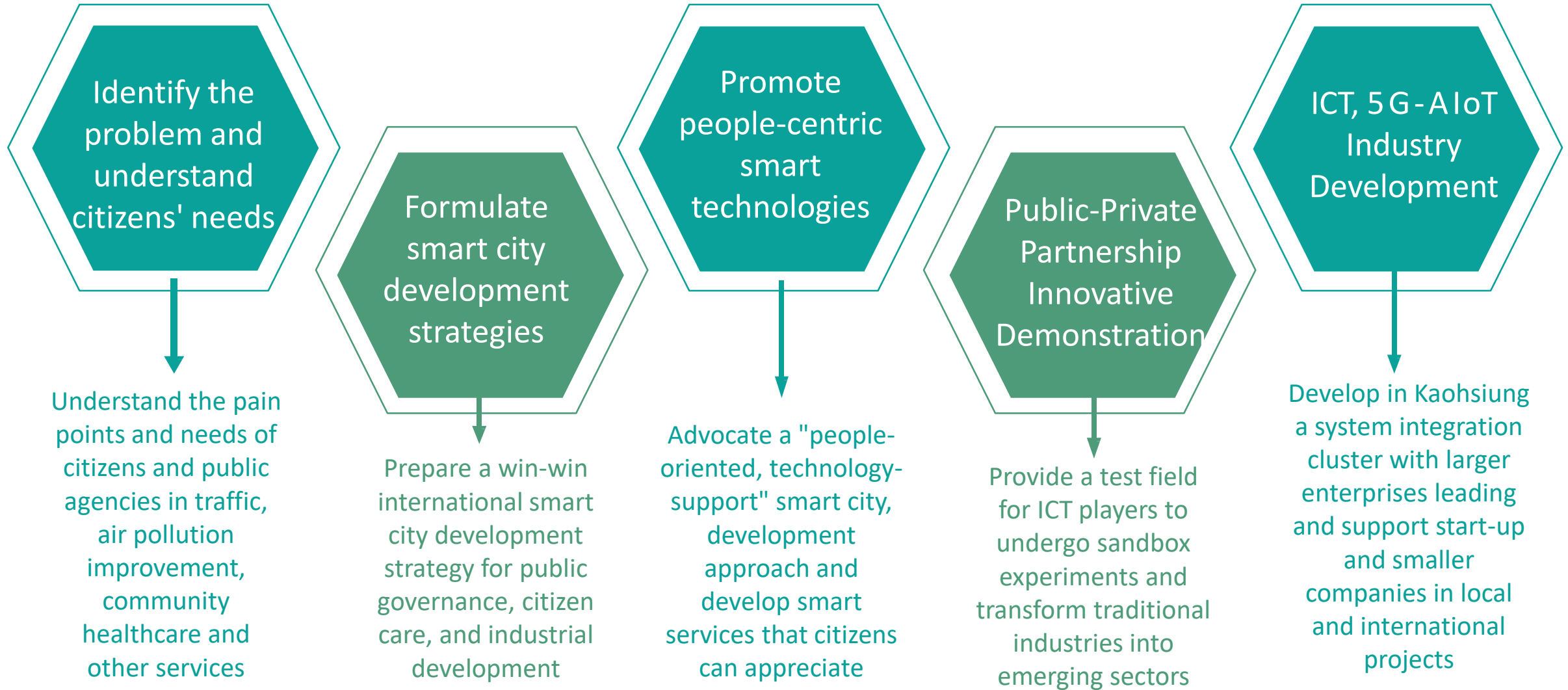
1 System Integration, Industry Transformation

2 Smart city in line with international standards

3 Serve as the New Southbound Tech Hub

Promotion Phases

Identify the problem and understand citizens' needs

Understand the pain points and needs of citizens and public agencies in traffic, air pollution improvement, community healthcare and other services

Formulate smart city development strategies

Prepare a win-win international smart city development strategy for public governance, citizen care, and industrial development

Promote people-centric smart technologies

Advocate a "people-oriented, technology-support" smart city, development approach and develop smart services that citizens can appreciate

Public-Private Partnership Innovative Demonstration

Provide a test field for ICT players to undergo sandbox experiments and transform traditional industries into emerging sectors

ICT, 5G - A IoT Industry Development

Develop in Kaohsiung a system integration cluster with larger enterprises leading and support start-up and smaller companies in local and international projects

Action Plans

Public Governance

Green Energy

Air Quality Monitoring

Public Safety

City Engineering

Healthcare

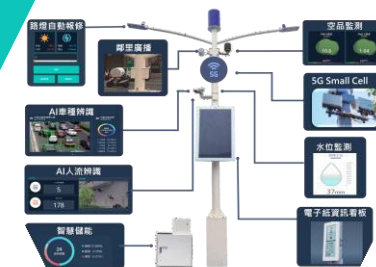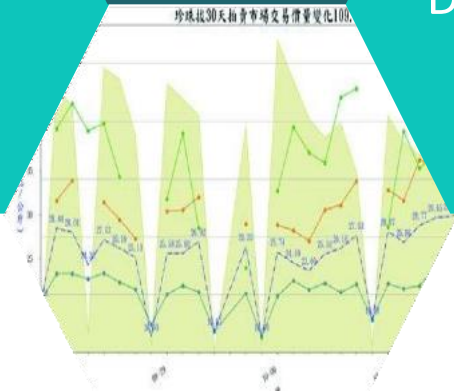Education

Industrial Transformation

Flood Prevention Monitoring

Glory Kaohsiung

Smart Agriculture

Safe and Disaster Free

Smooth Traffic

Case 1: Smart Transportation

Introduction of multi-target tracking radar devices, CMS warning boards and a deep learning platform, along with an artificial intelligence event assessment system, allow the city to deploy active motorcycle speeding warning, analysis of mixed traffic flows, and potential clash warning caused by violations of four-wheelers in fast lanes. And other functions, implement experiment planning, field deployment and experiment.

Source: III

Case 2: MaaS (Mobility as a Service)

1 Journey planning

Enter the starting and ending points to automatically plan the route, making travel easier

2 Realtime information

Integrate multiple transportation systems
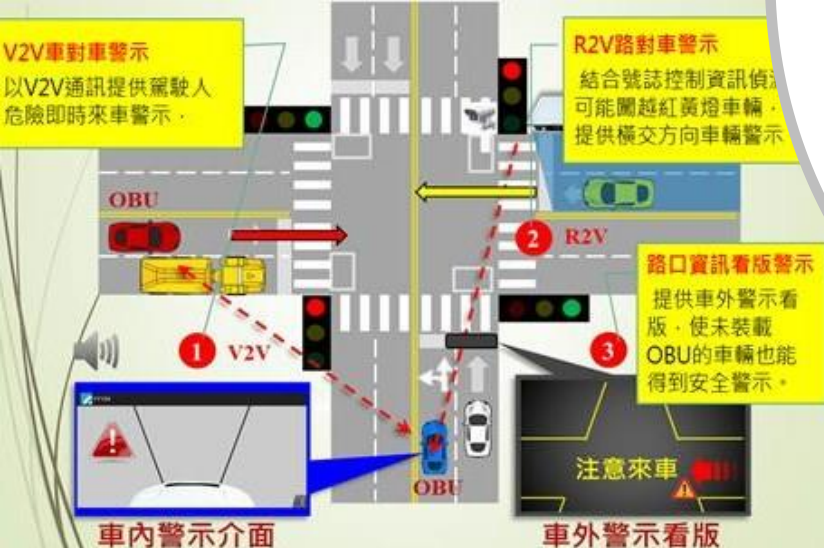
3 EC Payment

Easy access to online payment information

Men·Go

一卡在手 移動無限

Case 3: Smart Light Rail

Light rail train's anti-collision system

V2V anti-collision system


V2X Applications

Source: THI

Real-time traffic information

Case 4: Harbor and New Asia Bay Area Applications

Smart Harbor:
- Establish a central monitoring center to detect driving fatigue and initiate vehicles remote control via 5G
- Operation Area from National Highway 7 to the container center of the port
- C-ITS collaborative smart transportation services

Automatous driving ship:
- Extended from the "Love River" to Kaohsiung Port
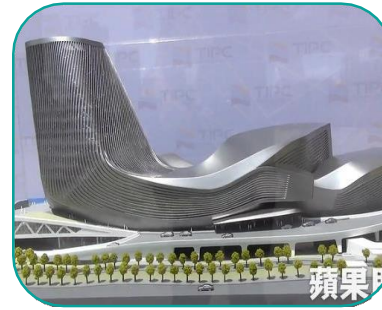
Smart Tourism:
- Collect passenger information
- Provide diversified transportation information & integration services
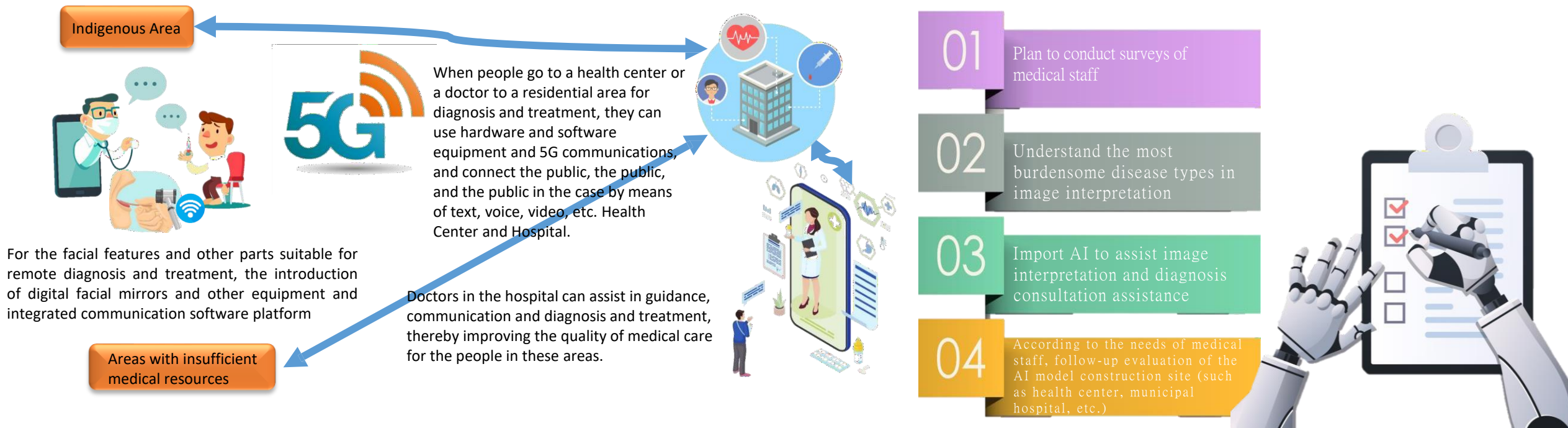- The best combination of travel and smart transport suggestions

Drone:
- Traffic monitoring in key areas
- Cargo transport in the area
- The area can serve as a competition arena for new applications

Case 5: Smart Healthcare

Indigenous peoples and rural areas are in general lack of sufficient number of medical institutions and medical resources. It is planned to introduce equipment such as digital octopus and an integrated communication software platform, and use 5G to connect patients, healthcare centers, and hospitals through text, voice, and real-time video. So that hospital physicians can assist in guidance, diagnosis and treatment, and improve the quality of citizens' medical care.

Indigenous Area

For the facial features and other parts suitable for remote diagnosis and treatment, the introduction of digital facial mirrors and other equipment and integrated communication software platform

Areas with insufficient medical resources

When people go to a health center or a doctor to a residential area for diagnosis and treatment, they can use hardware and software equipment and 5G communications, and connect the public, the public, and the public in the case by means of text, voice, video, etc. Health Center and Hospital.

Doctors in the hospital can assist in guidance, communication and diagnosis and treatment, thereby improving the quality of medical care for the people in these areas.

01 Plan to conduct surveys of medical staff

02 Understand the most burdensome disease types in image interpretation

03 Import AI to assist image interpretation and diagnosis consultation assistance

04 According to the needs of medical staff, follow-up evaluation of the AI model construction site (such as health center, municipal hospital, etc.)

Case 6: Smart Long-term Care

Long-term care transportation includes general-purpose taxis, rehabilitation buses, and designated vehicles. At present, each has its own dispatch method, service and management models. Different vehicles have different payload efficiency. The city hopes to integrate different transportation models in order to provide the needed citizens with the best delivery service.

With assistance from IT experts to redesign and deploy long-term care transportation cloud service system

Confirm the cloud service system and service parameters based on the current situation and needs of long-term care transportation services in Kaohsiung City

Through the cloud service system, complete long-term case transportation service demand analysis, and design the city's long-term care service model that meet user needs

Case 7: Smart Green Energy

Fishery and Electricity Symbiosis

Kaohsiung City marine ponds 4,010 hectares

Ecological Impacts

Regulatory Concerns

Buffer Zone

Field Trial Zone
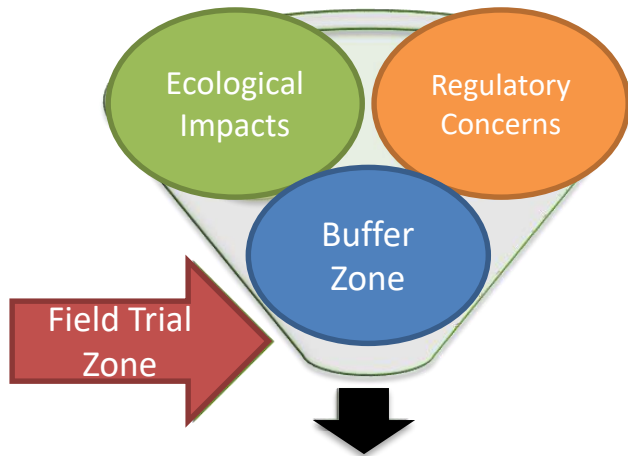
622 hectares approx. 15%

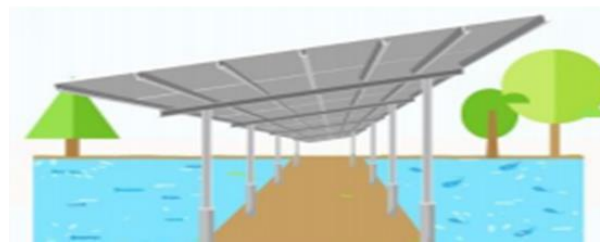## Farming-oriented Green Energy Solutions

Electricity supplier

Landowner

Farmers

Fish-Electricity Symbiosis PMO
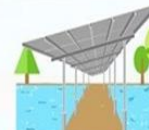Kaohsiung City
One-stop services

Fishery and Electricity Symbiosis's advantages for fishery development

Deploy smart fishery resources

Rental income increases for landlords

Upgrade traditional fishery Industry

Reduce fishermen's total costs

Transform farming area

Case 8. Smart Rescue

Hospital capacity information

Hospital emergency

Dispatch vehicle instant message (vehicle code, urgency, estimated arrival time)

EMOC KAMERA

Mobile Ambulance System

Mobile ambulance data sharing (record form pdf, hospital data exchange)

KAOHSIUNG SMARTCITY
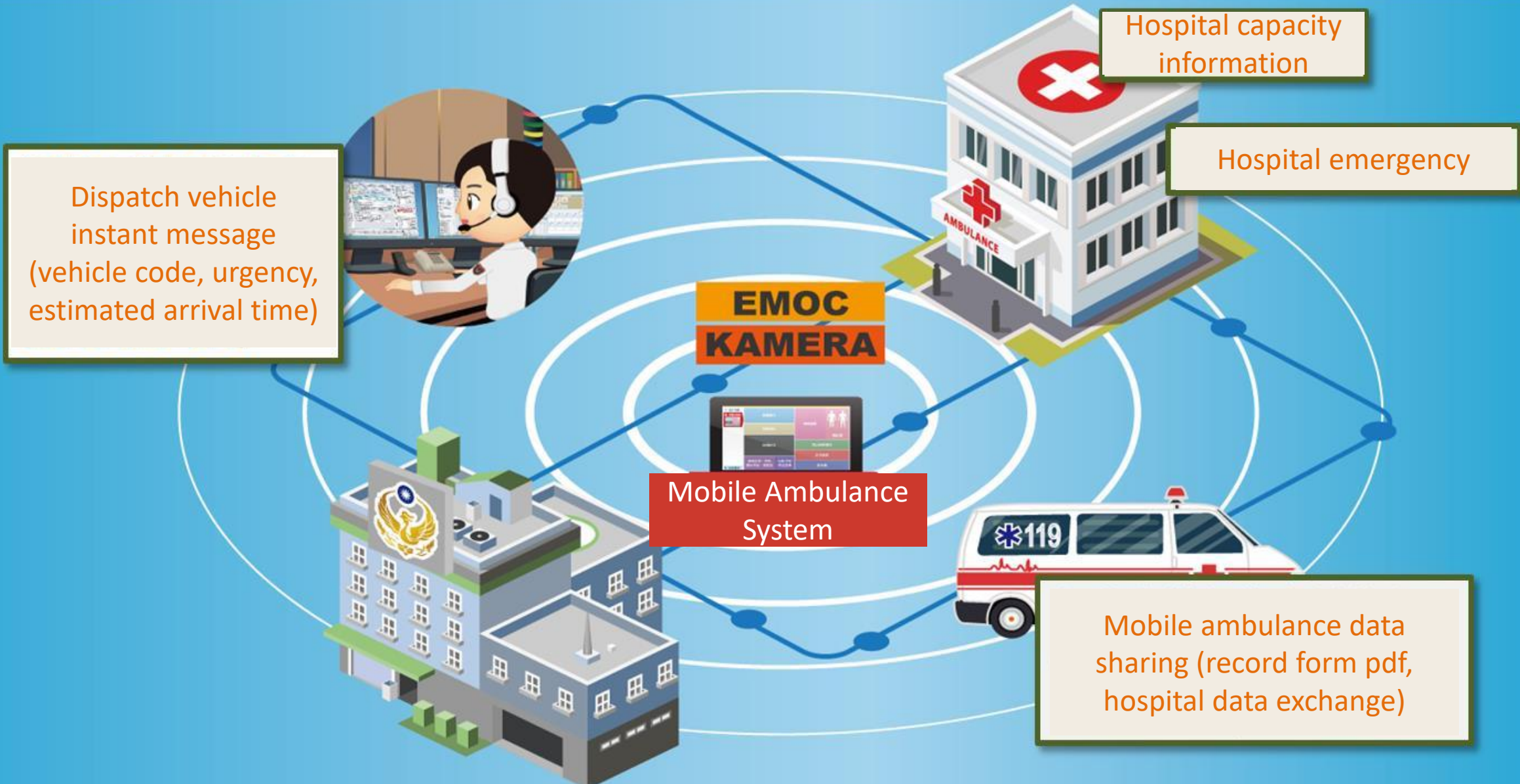
With ground-penetrating radars, 3D non-destructive detection methods are used to supplement the existing pipeline 3D map data, and the Kaohsiung City 3D facility pipeline data display system can be used for AR-support construction, road pipe excavation construction support, and underground pipeline conflict management applications.

3D pipeline map AR auxiliary construction application

3D facility pipeline information display system

3D underground pipeline conflict management and application

Road construction 3D auxiliary system

5G-AIoT Development Strategies
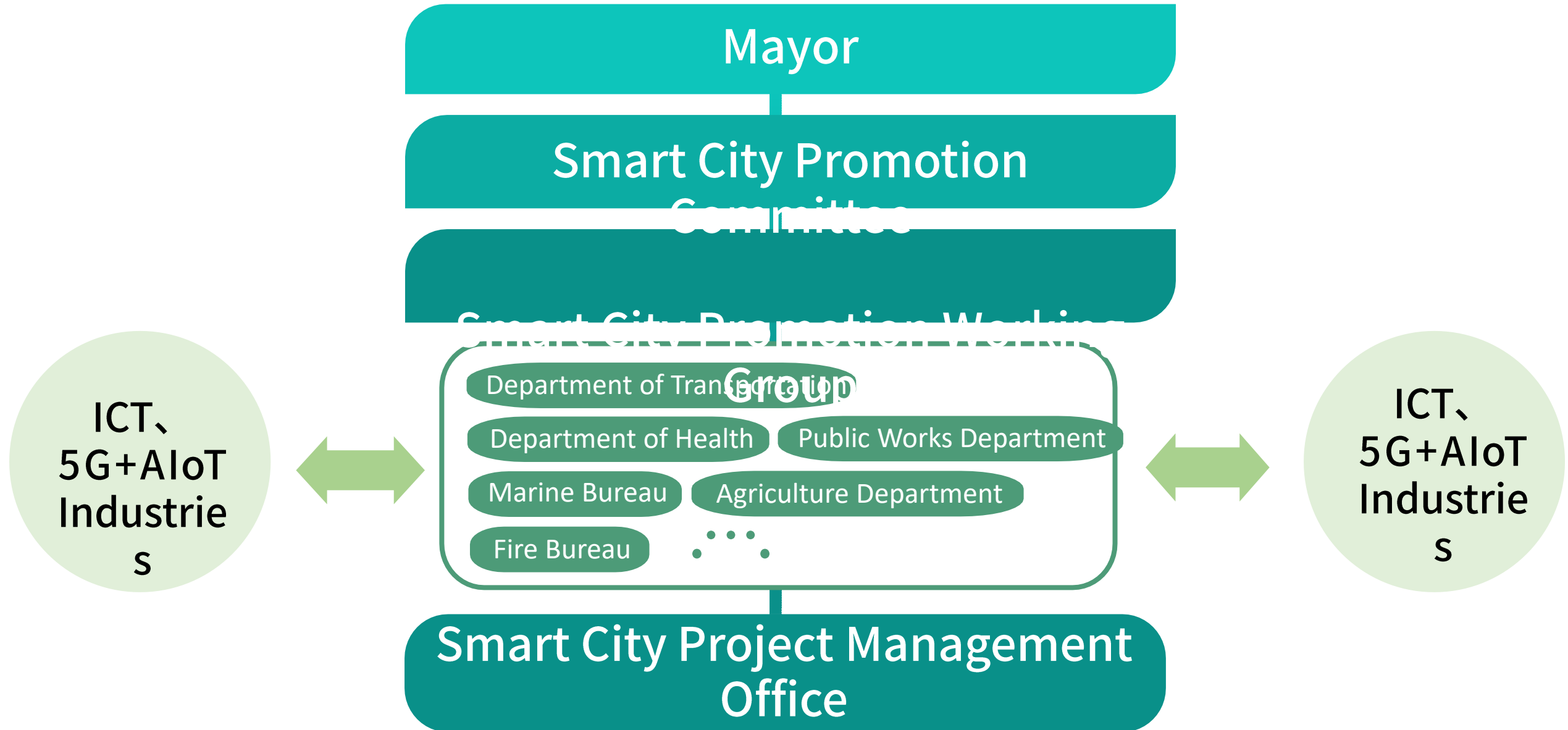

Strategy 1

The "Kaohsiung Smart City Promotion Committee" has been established on December 25, 2020, inviting elites of related fields serve as member to provide recommendations to help promote development of Kaohsiung's smart city

Strategy 2

Kaohsiung plans to invest 350 million USD in the next 5 years to develop Asia New Bay Area into an advance 5G-AIOT smart city demonstration zone, establishing an international-class ecosystem to attract 5G and AIoT companies, accelerate local industry transformation and create new jobs

Public-Private Partnership

Mayor

Smart City Promotion Committee

Smart City Promotion Working Group

Department of Transportation

Department of Health

Public Works Department

Marine Bureau

Agriculture Department

Fire Bureau

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ICT、5G+AIoT Industries

ICT、5G+AIoT Industries

Smart City Project Management Office

KAOHSIUNG SMARTCITY

Jointly promote Government's New Southbound Initiative

Kaohsiung Asia New Bay Area POC field, Sea and Air twin ports

National Development Council's Spotlight Program

International Class system integration companies

Ministry of Economic Affairs Smart City Taiwan Project

Kaohsiung is well-positioned as Taiwan's Tech Hub for Smart City International Collaboration with New Southbound Countries

Smart Kaohsiung,
Asia New Bay Area
Tech Hub