Recycling Fund:
Smart Recycling Fleet Routing and Weighing System Scheme

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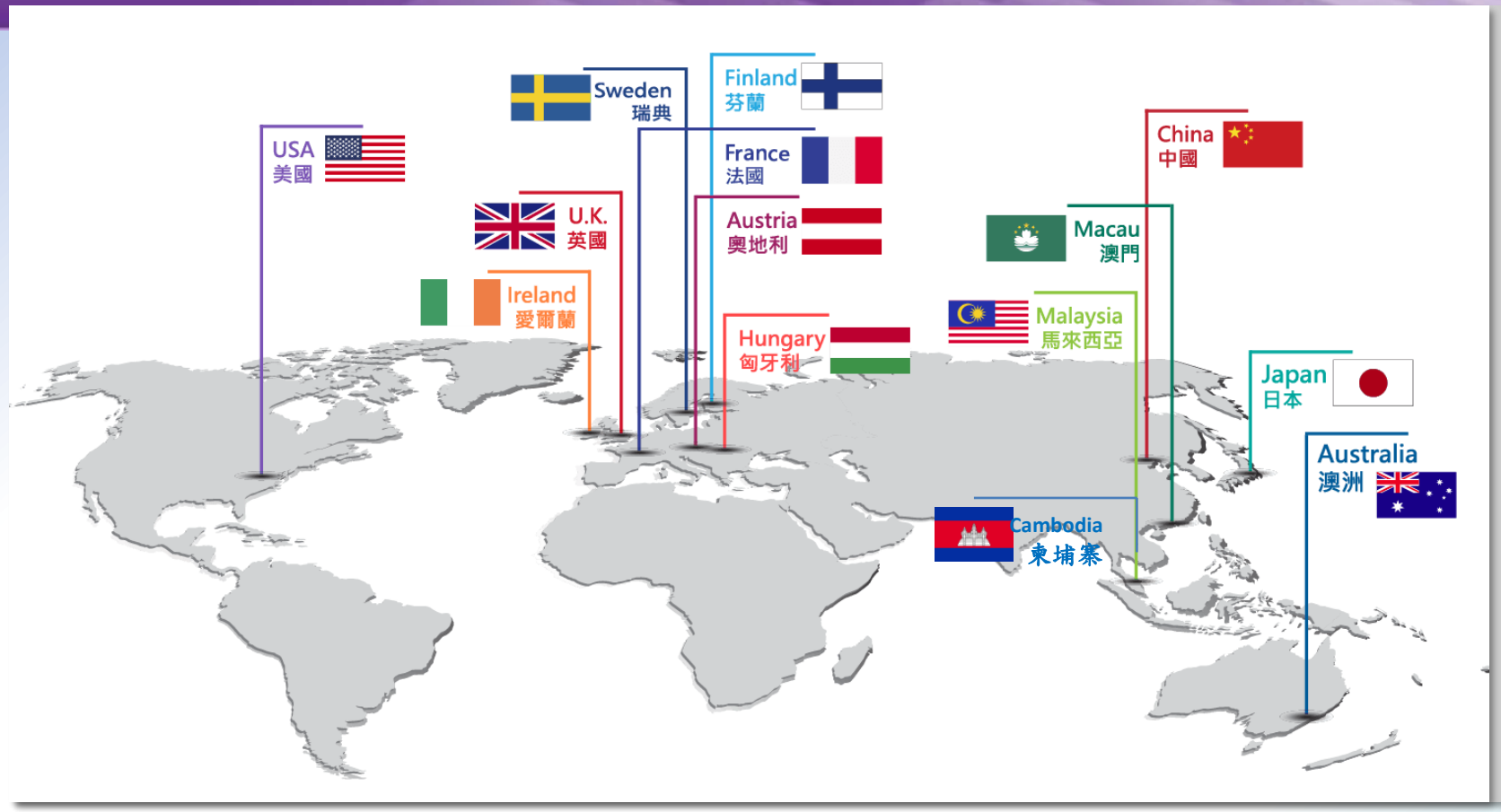
SCC
智慧城市聯盟
Smart City Consortium

What is Smart City Consortium

5+
Years



43
MoUs

14
Countries & Regions

350+
Events

~300
Members

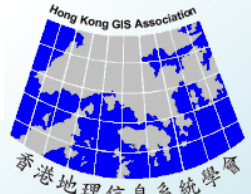
24
Committees

4
SIGs

Partnership with International and Local Organisations

Global Alliance

Local Alliance



Current Challenge of Recycling Industry in HK

High labor cost

Difficult to predict the recyclables collection time

Difficult to optimize the collection routes for vehicles

Unable to ensure accurate weighing of recyclables of each residential site

Smart Recycling Fleet Routing And Weighing System Scheme

Near 4 million granted

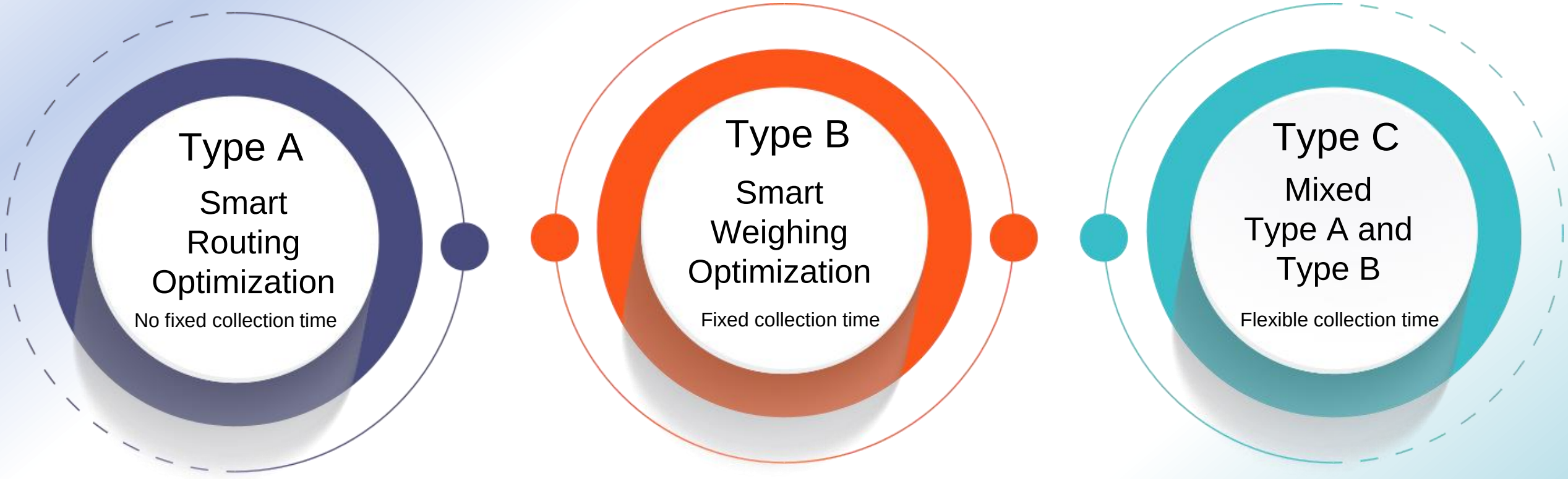
To conduct a pilot study for smart routing and weighing system

Enhance the collection efficiency of paper, plastic and aluminum recyclables

Implementation Organization :

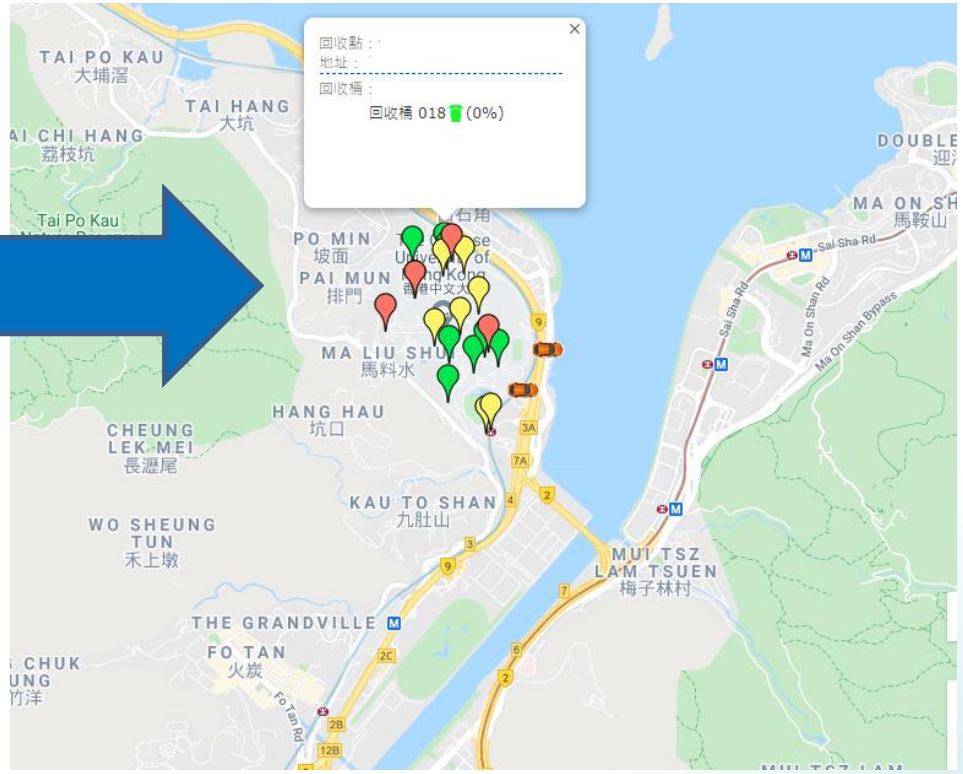
Hong Kong Quality Assurance Agency

3 Types of Digitalisation in Pilot Study



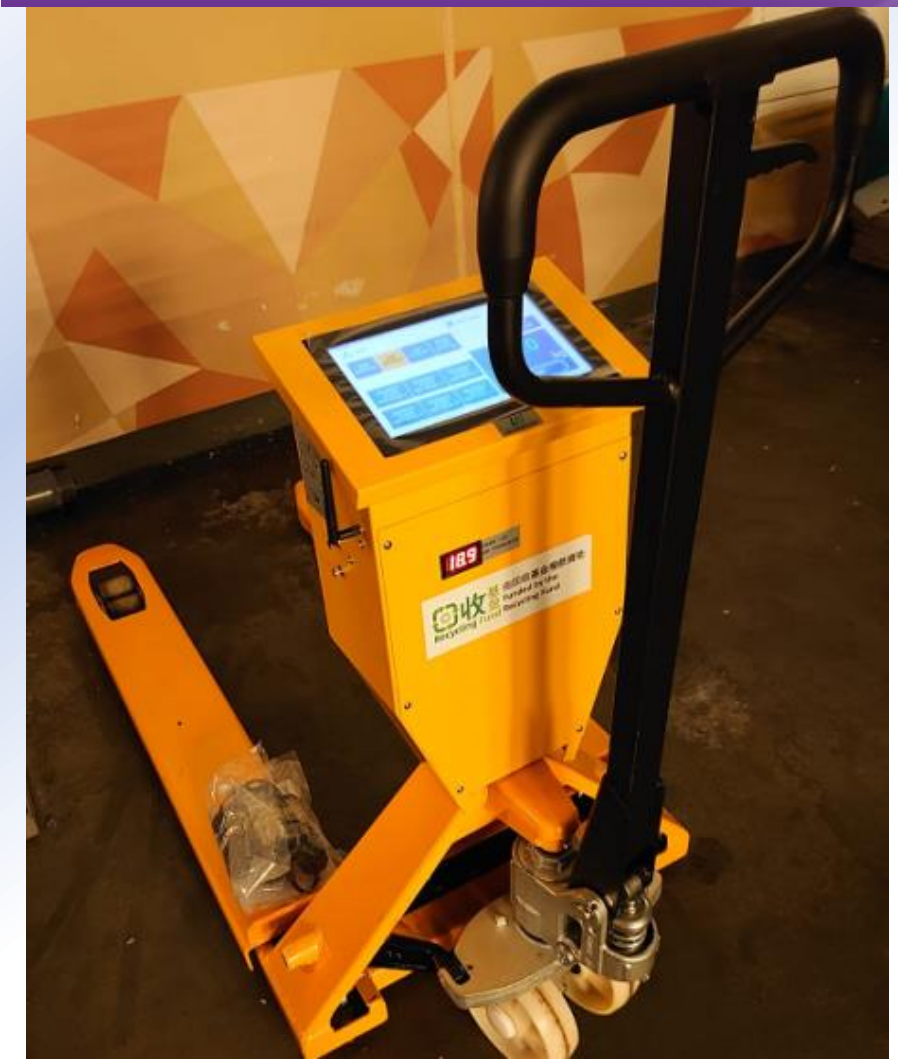
Type A - Smart Routing Optimization

- Fill level sensor provides real-time filling level of the bins/cages



- Route optimization by using GIS
- Phone apps assisting truck drivers

Type B - Smart Weighing Optimization

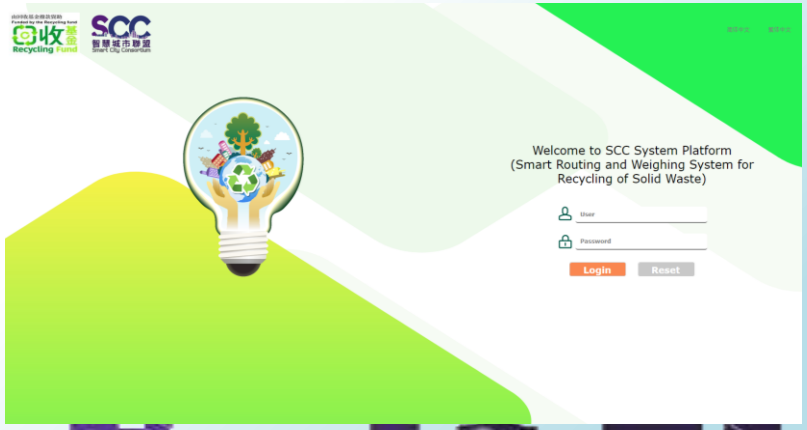


- RFID reader & electronic scale are installed in the pallet truck
- RFID tags are embedded on the bins/cages
- Pallet truck will identify the ID of the bins/cages when measure the weight of the recyclables
- Data including bins/cages' ID & weight will be transferred online wirelessly to backstage system

Smart Recycling Fleet Routing and Weighting System

Benefit of Recycling Industry Digitalisation

- Increase the operation efficiency
- Optimize the resource utilization
- Reduce the transportation cost
- Optimize the quantity of recycling vehicles and drivers
- Minimize the work load and human error



Effectiveness of the Pilot Scheme

5 recyclers feedback are positive

Item	Scope	Scoring (from Lowest 1 to Highest 5)
System Application and Mobile Apps	• Recyclables collection fleet arrangement • Vehicles control • Recyclables collection time • Drivers working status & etc	4.26
Smart Devices	• Recyclables fill level monitoring • Sensors operations • Weighing system accuracy & etc	4.16
Optimization Effectiveness	• Routing optimization • Simplification of daily operation flow • Reduction of labor and transportation cost	3.96
	Total	**4.12**

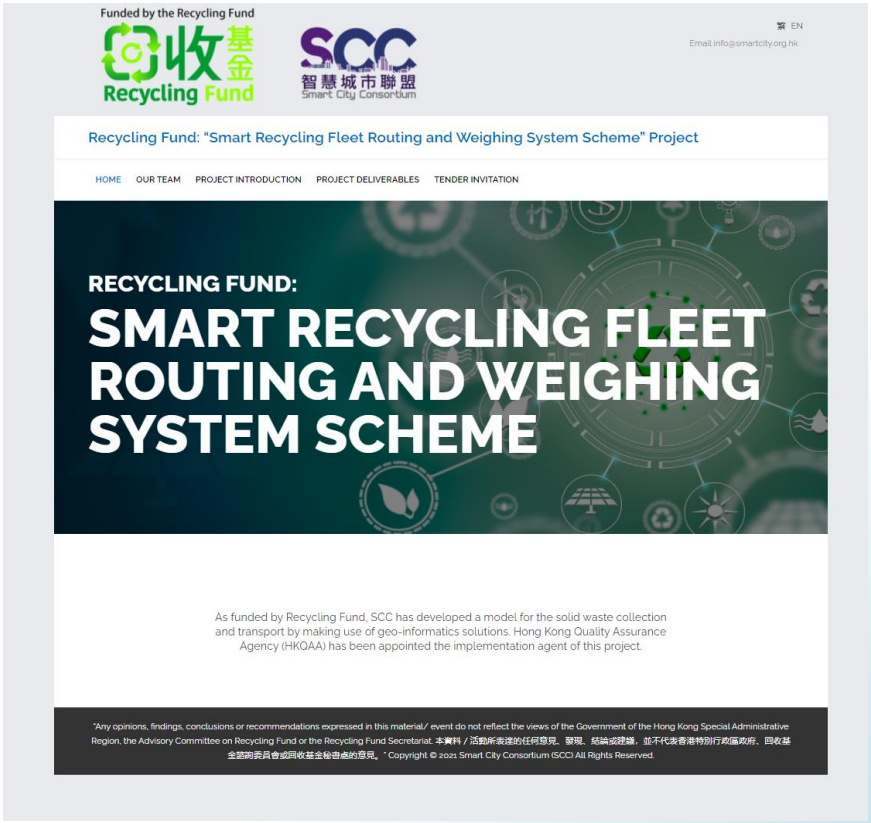
Conclusion and Way Forward

Local aspect

- Continue to run the system as cost recovery basis for recyclers in Hong Kong

Global aspect

- Explore to Replicate and localise the system in Japan



For more information, visit
https://sccgreentech.hk/en/

Public-Private-People-Partnership (4P)
Achieve the ultimate goal of "Smart City 3.0"

THANK YOU!

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