

**Government of
The Hong Kong Special Administrative Region**

Electrical & Mechanical Services Department
3 Kai Shing Street
Kowloon, Hong Kong

**Invitation for Market Research in Supply, Installation,
Operation and Maintenance of New Generation Parking
Meter System for Trial**



Project Division, EMSD
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For technical enquiries, please contact the Project Engineer - Mr. WF SIN on telephone number 3155 4437 or fax number 2873 2154.

1. Introduction

The Government is planning to conduct a trial to assess the technical feasibility and public acceptance of the following new features and functions for the new generation parking meters system (“the System”) for use in Hong Kong. The System should have the:

- (a) capability of accepting multiple payment methods, including:
 - (i) payment by Octopus Card using a new model of Octopus reader (this function is mandatory for the trial, a general description of Octopus system is contained in Annex A);
 - (ii) payment by other contactless cards, e.g. Visa PayWave, MasterCard PayPass, China Union Pay Quickpass, Autotoll, etc; and
 - (iii) payment by phone ^{Note 1}.
- (b) wireless connection with security protection for automatic uploading of parking meter transaction and utilisation data in real time or in batch mode, and enabling remote configuration of meter settings
- (c) Suppliers are welcome to propose other new features and/or functions

Note 1: Payment by phone offers further convenience to the public. Text message can be sent to notify the persons, who are required to pre-register for the service, via phone at a pre-defined interval before the parking session expires. The persons can then pay for more parking time by making a phone call or through mobile application without having to go back to the parking meter to feed the meter in person. The additional parking time should be reflected accurately at the parking meter upon successful completion of the required process. The service providers may also make use of the System to provide e-applications or mobile applications to provide information on the availability of parking spaces and other real-time information as necessary.

Please note that there will be no mains electricity feed to the parking meters, the offered parking meters are to be powered by commercially available batteries.

A tender invitation will be issued at around 3rd quarter of 2013 to call for the supply, installation, operation and maintenance of the System for trial. This paper serves to invite potential Contractors to provide the Government with market information for reference in preparation of the tender invitation. Contractors replying to this invitation would have no advantages relating to the upcoming tender invitation.

2. General Requirements of the Trial

2.1 Scope of Works

The upcoming tender will call for the supply, installation of the System and provision of operation and maintenance services in a trial conducted by Transport Department (TD). The trial is expected to be commenced in mid 2015 for a period of about nine (9) months. The trial shall comprise of at least 20 parking meters (the parking meters can be of dual bay or up to quad bay types), the backend computer system and the payment by phone platform. Selected Contractor(s) will be allocated road-side parking spaces for the installation of the new generation parking meters. The Contractor will be required to operate and maintain the new generation parking meters, collect the parking meter revenue on behalf of TD, collect and collate the necessary statistics / data and compile reports to validate the technical feasibility of the System.

The Contractor shall be responsible to secure clearance banks on behalf of the Government for the selected contactless card(s) transactions settlement.

It is intended to complete the whole trial in 1st quarter of 2016. All recovered equipment shall remain the property of the Government.

2.2 Operational and Maintenance Services Period

The extent of work shall include:

- a) Provision of the parking meter revenue collection service
- b) Provision of the parking meter revenue clearing service with payment institutions
- c) Provision of maintenance service
- d) Provision of hotline enquiry service for operational and maintenance matters of installed meters according to the service standards stated by TD
- e) Suspension of the parking meters if required by TD during the trial
- f) Removal of the parking meters after the trial

3. Functional and Technical Specifications

3.1 The new generation parking meters offered shall:

- a) be of dual bay (one standalone meter governing 2 parking spaces) or upto quad bay (one standalone meter governing 4 parking spaces) type(s)
- b) allow users to procure parking time under the current fare structure (reference is made to Road Traffic Regulations Cap. 374C)
- c) be equipped with a display screen
- d) allow users to review the remaining parking time of the bay managed on the display screen
- e) provide means to alert Police to regulate and enforce parking activities
- f) be equipped with reader(s) to accept Octopus and other selected contactless card(s) payment
- g) be equipped with wireless connection with the backend computer system for automatic uploading of parking meter transaction and utilisation data in real time or in batch mode, and enabling remote configuration of meter settings
- h) be equipped with a real time clock
- i) be operated by commercially available battery (suppliers are welcome to propose integrated use of solar power panel) with capacity sufficient to allow operation of not less than 6 weeks
- j) be strong enough to protect from vandalism

3.2 The backend computer system shall:

- a) be equipped with wireless station for automatic uploading of parking meter transaction and utilisation data in real time or in batch mode, and enabling remote configuration of parking meter settings e.g. downloading blacklist card data to the parking meters
- b) be equipped with a central processing unit to be installed with good security in the Contractor's office which oversees the operations of the various components of the entire system. It shall mainly be responsible for co-ordination of system activities, identification of possible reconciliation discrepancies from clearing institution(s) and data collected, detecting possible occurrence of invalid transactions, comprehensive and efficient financial report generation, comprehensive and efficient statistical report generation, storage, maintenance of parking meters etc
- c) be equipped with a remote auditing unit to be installed in TD's office which serves the function of data auditing of the parking meter system including but not limited to data integrity, completion of scheduled activities

3.3 The payment by phone platform shall:

- a) allow users to register with the System to start use of phone payment
- b) allow users to pay for parking by calling from their mobile phones with the entry of a parking meter ID which is marked on the meter
- c) be capable to push the procured parking time data to the parking meters via wireless connection, allowing the users to review the remaining parking time of the bay managed on the display screen

- d) enable text message to be sent to notify users at a pre-defined interval before the parking session expires
- e) allow users to pay for more time by making another call
- f) allow users to settle payment with multi-different payment clearance institutions e.g. credit cards, bank account debits, etc
- g) confine users to procure the maximum parking time period under the current legislation (reference is made to Road Traffic Regulations Cap. 374C)

4. Type Approval Test

Type approval tests are required to be carried out by Octopus Cards Ltd and the other selected payment institutions to verify the meters are capable to handle the payment transactions, downloading of transactions and uploading of control parameters in a secure manner. The associated cost shall be borne by the Contractor.

5. Market Information Requested

Please assist to provide information as requested in the attached Schedules A & B. The provided information will be used as references by the Government, there shall be no obligation committed from your Company and the Government regarding the information requested and provided in this invitation.

Schedule A – System Proposal

- i) Please indicate whether your Company have interest to bid for the upcoming tender for the supply, installation, operation and maintenance of the new generation parking meter system for trial.

- ii) Please provide the proposed design (with documentations, drawings and system operation flows) and implementation plan (with respective schedules including the production and on-site setup leadtime) of
 - (a) the new generation parking meter (please provide the dimensions of the meter, preferable size to be comparable to the existing parking meters in Hong Kong)

 - (b) the payment by phone platform (*Note 2*)

 - (c) the wireless connection between new generation parking meters and the back end system

- iii) Please provide names of equipment manufacturers and/or partnering companies in mind if any e.g. wireless connection carrier in Hong Kong, payment by phone operator, etc.

- iv) Please indicate which contactless card payment type(s) your Company are capable to secure for the trial (please note that Octopus card is mandatory for the trial).

- v) Please indicate how many contactless card reader(s) will be deployed in the design of the parking meters e.g. one reader for all of the payment cards; or one reader for Octopus card and one reader for the rest of the other contactless cards, etc.

- vi) Please provide the planned organization chart of local technical support team in Hong Kong.

Note 2 : Input to this clause may be omitted if a payment by phone platform cannot be offered

Schedule B – Budgetary Cost Indication

Note : Please provide the one-off budgetary cost for the trial. Cost estimates provided are for reference ONLY

Item	Description	Qty	Make & Model	Unit rate (HK\$)	Sub-total (HK\$)
1	Parking meters	20			
		50			
		100			
		200			
2	Backend computer system	1			
3	Payment by phone platform (<i>Note 2</i>)	1			
4	Type approval test charges	1			
5	Installation, operational and maintenance services for 9 months (<i>Note 3</i>)	1			
6	Third parties liability insurances	1			
7	Any other items not included in the above but considered to be necessary for the trial (please specify)				

Total in HK\$:
For 20 parking meters _____
For 50 parking meters _____
For 100 parking meters _____
For 200 parking meters _____

Note 2 : Input to this clause may be omitted if a payment by phone platform cannot be offered

Note 3 : The parking meter payment transactions handling fees charged by Octopus Cards Ltd , the other selected contactless card(s) clearance bank(s) and the payment by phone operator are to be borne by the Contractor i.e. the Contractor will pay the Government the whole and exact revenue collected in the trial parking meters.

General Description of the Octopus System

Octopus is a contactless smart card administered by Octopus Cards Limited. Octopus was introduced in Hong Kong over a decade ago. Today, 95% of people in Hong Kong aged 16 to 65 uses Octopus to travel, shop and dine without the hassle of coins.

From a simple way to pay fares on public transport, Octopus has extended its reach into small-value payments in the retail sector as well as many other applications, including access control for residential and commercial buildings and support for various facilities in schools.

Each Octopus card contains a built-in microchip which stores its owner's payment information. Users simply "beep" their Octopus card on different fare or payment processors through the use of an Octopus reader/writer which automatically deducts the correct amount from the card.

When the value within Octopus is depleted, the card can be re-charged via self-service machines, customer service centers, authorized merchants or registered Autopay service launched in conjunction with a number of banks.

Inside the Octopus card is a hardwired logic operating system with small card data storage. The electronic purse value is maintained on each card so that money will be deducted directly from the card for each transaction. Similarly, the purse value will be incremented when the card is topped up.

Apart from being stored in the card, all usage and re-load transactions are also transmitted to the Octopus Clearing House System (OCHS) of Octopus Cards Limited. Every transaction record sent to the OCHS will carry a unique transaction sequence number generated by the Octopus card, together with other information like card number, transaction date and time, device number, transaction amount, as well as remaining balance on the card when the transaction was made.

For more information about the Octopus card, please go to the website at www.octopus.com.hk.

Interested parties can also contact Octopus Cards Limited's business enquiry hotline at Tel: [2266 2823](tel:22662823) or Email: bizenquiries@octopus.com.hk for more technical details.

THANK YOU