

## **Legislative Council Panel on Transport**

### **New Parking Meter Trial Scheme**

#### **PURPOSE**

This paper informs Members of the proposed New Parking Meter Trial Scheme which aims to assess the technical feasibility and public acceptance of the new features and functions to be incorporated in the new generation of parking meters.

#### **BACKGROUND**

2. On-street parking spaces are provided to cater for short-term parking needs. These parking spaces are normally metered to discourage prolonged parking to enhance their availability to more motorists. As at mid-2012, some 9 800 electronic parking meters are installed at about 18 100 on-street parking spaces across the territory. The existing parking meters which accept Octopus Card for payment of parking fees have been put in use since 2003/2004. As the existing parking meters have been in use for about 10 years, they will soon approach the end of their planned serviceable life<sup>1</sup> and will need to be replaced. It is therefore opportune to examine the scope for introducing a new generation of parking meters with new features and functions.

#### **PROPOSAL**

3. The Transport Department (TD), with the assistance of the Electrical and Mechanical Services Department (EMSD), has recently conducted market research and questionnaire surveys with suppliers and relevant overseas government departments to gather information on state-of-the-art features and functions of new parking meters. Possible new features and

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<sup>1</sup> To allow sufficient time for the new parking meter trial and subsequent procurement and installation of new parking meters, TD will procure the necessary spare parts of existing parking meters to extend their serviceable life until the replacement by new parking meters.

functions include capability of both on-line and off-line modes of payment transaction, acceptance of different payment methods (e.g. contact or contactless smartcards, credit cards, and payment by phone and SMS), connection with backend computer through wired and/or wireless networking, energy efficient battery design, etc.

4. Based on the findings, we consider that the following new features and functions may be suitable for incorporation into the new generation of parking meters, and recommend conducting a field trial to assess their technical performance and suitability for use in Hong Kong:

- (a) capability of accepting multiple payment methods, including:
  - (i) payment by Octopus Card using a new model of Octopus reader with enhanced transaction speed and reliability;
  - (ii) payment by other contactless cards, e.g. Visa PayWave and MasterCard PayPass;
  - (iii) payment by phone/SMS; and
- (b) wireless connection for automatic uploading of transaction and utilisation data in real time or in batch mode, and enabling remote configuration of meter settings.

#### **(a) Payment Methods**

##### *(i) Payment by Octopus Card using a new model of Octopus reader*

5. Since 2003/2004, Octopus Card has been the sole payment method of parking meters. According to the “Parking Meter User Satisfaction Survey” conducted in 2008, 92% of the respondents (out of 1 000 successful interviews) were either very satisfied or satisfied with the Octopus Card payment method; 6% were neutral and only 2% were dissatisfied. The survey also revealed that the respondents considered the following features important and were satisfied with the Octopus Card payment method which has the following features:

- (a) user friendliness in payment transaction;
- (b) no need to remove card from wallet/or insert card into reader;
- (c) ease and convenience in reloading value;
- (d) no annual fees;
- (e) convenience in card acquisition;
- (f) multi-purpose (e.g. public transport fare payment, retail payment, etc.); and
- (g) light and handy.

6. Octopus Card has become more and more popular since its introduction. There are presently more than 20 million cards in circulation in Hong Kong. Because of their popularity and given the above findings, TD considers it appropriate to maintain the Octopus Card payment method when introducing the new generation of parking meters. To enhance the performance of the Octopus Card (in terms of speed and reliability), we suggest to upgrade the card readers on the new parking meters with the latest technology, and propose to conduct a trial to test the functionality of a new Octopus reader.

(ii) Payment by other contactless card

7. To provide more choices of payment methods to the public, we propose to explore the feasibility of adopting payment by contactless cards (other than Octopus Card) in the new generation of parking meters, subject to expression of interest by concerned companies.

8. In recent years, Visa PayWave and MasterCard PayPass cards are two emerging contactless transaction payment cards in Hong Kong. According to TD's research, there were about seven hundred thousand Visa PayWave cards in circulation in June 2010 while MasterCard Company (MasterCard International) has a plan to introduce PayPass cards in Hong Kong soon. Both Visa PayWave and MasterCard PayPass have developed capabilities for off-line retail payment, and therefore have the potential of being adopted as a payment method for the new generation of parking meters. They are both capable of operating in an off-line environment without the need for input of a personal identification number or signature authorisation, and have proven efficiency in payment settlement, as well as security in revenue collection. It is also known that China Union Pay, American

Express and Autotoll are developing their own contactless cards but the timing of their introduction in Hong Kong is uncertain.

9. Although it would be ideal to have a common reader capable of supporting Octopus Card and other contactless payment cards, card companies in Hong Kong may have reservations about sharing a common reader due to commercial, operational and security considerations. To address this issue, EMSD has advised that it would be technically feasible to install several separate readers in the new generation of parking meters to cater for different contactless payment cards and Octopus Card.

(iii) Payment by phone / SMS

10. Payment by phone/SMS offers further convenience to the public. Text/SMS message can be sent to notify the vehicle owners, who are required to pre-register for the service, via phone at a pre-defined time before the parking session expires. Vehicle owners can then pay for more parking time by making a phone call or sending a SMS without having to go back to the parking meter to feed the meter in person. 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.

11. While this payment method may provide convenience to vehicle owners, we are mindful of its possible impact on the principle of the provision of on-street parking spaces for short-term parking. There is also concern that the introduction of this payment method might call for a need to revamp the existing enforcement mechanism. There is currently no such service provider in Hong Kong and the initial capital investment (including server and proprietary software) and subsequent recurrent costs, including the telecommunication charges, would be high.

12. Despite the above concerns, TD is prepared to further explore the technical, operational and financial feasibility of the payment by phone/SMS method in the trial scheme. Subject to the results of the trial, TD will further assess the suitability of this payment method from the policy, enforcement and cost-effectiveness perspectives.

**(b) Wireless connection between parking meters and the backend**

## **system**

13. The existing parking meters operate in an off-line mode. Transaction data are recorded in the parking meters and retrieved on site via a portable data retriever once every four days. With the advancement in communication technology, wireless connection between the parking meters and the backend system may be considered in view of the following potential system enhancements:

- (a) automatic uploading of transaction and utilisation data in real time or in batch mode;
- (b) pro-active fault alert, e.g. defective meters, low battery, etc.;
- (c) remote configuration and activation of meter settings, e.g. changes of rates, parking time arrangements and service suspension at different periods of time;
- (d) prompt attendance to faults and improvement in operational efficiency; and
- (e) capability to offer a platform to provide Government information and messages through the display panel of the parking meters.

14. To discourage long-term parking at on-street metered parking spaces, parking meters allow choices of parking time in units of 15 minutes or 30 minutes (parking time unit). The longest parking time allowed for each transaction is fixed at 30 minutes, 1 hour or 2 hours having regard to the traffic situation and parking demand in the area where the parking meters are located. Under the existing parking meter system, charging and parking time arrangements have to be pre-determined and uploaded onto the memory cards of the parking meters. Any adjustments to these arrangements have to be carried out manually. We will examine how the new generation of parking meters could allow greater flexibility in the charging mechanism and parking time arrangements to better serve the needs of the motorists.

15. More advance technologies have to be applied to overcome security issues during data transmission. Higher electricity consumption is also required to drive the wireless communication modules (e.g. GPRS) on top of the functions of the existing parking meters. Since almost 99% of the parking meter locations are covered by wireless telecommunications networks, we propose to conduct a trial on the wireless communication mode to ascertain the benefits of wireless system networking. For parking meter locations with no wireless telecommunications coverage, cable connection or existing manual data retrieval method may be required. As regards the issue of battery life, we may take the opportunity to assess the technical feasibility of using solar-powered rechargeable battery in the trial.

## **CONSULTATION**

16. We consulted the Transport Advisory Committee on the proposed trial in June 2012 and members were generally supportive.

## **WAY FORWARD**

17. We propose to conduct a trial to assess the technical feasibility and public acceptance of the above-mentioned new features and functions for the new generation parking meters. The whole trial scheme would take about 36 months, taking into account the time required for conducting the expression of interest exercise, the tender exercise; the production of prototype parking meter (including card reader type approval by Octopus Card Limited and other contactless card companies for the trial) and a field trial for about 9 months. TD would require each parking meter supplier interested in participating in the trial scheme to provide around 20 new parking meters for trial use. There is no pre-set limit on the number of suppliers for the trial. The estimated cost of the proposed trial will be subject to the results of the expression of interest exercise. TD plans to complete the trial by early 2016 and conduct a tender exercise for the installation and operation of the new parking meters in 2017.

18. Meanwhile, TD will refurbish the existing parking meters where necessary by replacing some of the important spare parts, to ensure their proper functioning and operation until they are replaced.

### **ADVICE SOUGHT**

19. Members are invited to note the contents of this paper.

**Transport and Housing Bureau  
Transport Department  
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