For discussion
on 24 May 2013

Legislative Council Panel on Transport

Average Speed Camera System Trial Scheme

PURPOSE

This paper seeks Members' views on the Administration's proposal to procure and install an average speed camera system (ASCS) for carrying out a trial scheme at the Shenzhen Bay Bridge (SBB) of the Hong Kong Shenzhen Western Corridor to assess the feasibility of introducing such a system in Hong Kong.

JUSTIFICATION

2. Speeding activities remain a road safety concern in Hong Kong. It endangers not only the driver and passengers of the vehicle concerned, but also other road users. In the past three years,[1] the average number of prosecutions instituted against speeding was 223 584 per year. To further combat and deter speeding behaviour, there is a need to enhance our speed enforcement actions.

BACKGROUND

3. In 1999, the Administration first introduced two wet-film speed enforcement cameras (SECs) operating on a rotational basis at ten camera housings installed at the Tolo Highway and Fanling Highway to combat speeding. To enhance enforcement capability, a digital SEC system

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[1] Prosecution figures involving vehicle speeding in the past three years are as follows :

Year	No. of Prosecutions
2010	216 512
2011	187 992
2012	266 249
Average	**223 584**

Since mid 2010, the SECs installed in 2004 had undergone refurbishment resulting in less number of SECs in operation and decrease in enforcement figures in 2011. Upon completion of the refurbishment and availability of additional SEC sites since December 2011, there was an increase in enforcement figures in 2012.

comprising eight digital cameras and 75 housings was installed at various locations in the territory in 2004. Since then the SEC system has continued expanding to cover some 120 strategic spots in the territory, with a total of 20 digital cameras and 120 housings. Upon completion of the Tolo Highway widening project in early 2015, the number of housings will be increased to 135.

4. SECs described above are installed at strategic spots to take photographs of speeding vehicles and record their speed data. They are effective in deterring speeding within the relatively short monitoring zone of each SEC. To achieve deterrent effect covering several kilometres of roads, a series of SECs would be required. However, some drivers may slow down their vehicles before an SEC and accelerate after passing it resulting in the deterrent effect of the SEC being localised, which is undesirable.

5. In recent years, ASCS has been developed and used in overseas jurisdictions to monitor speeding activities over a longer distance with better results. In an ASCS, two cameras are installed, one at the entrance and one at the exit of the road section being monitored. The system employs Automatic Number Plate Recognition (ANPR) technology to identify individual vehicle as it passes the entrance and exit cameras, so as to calculate its average speed over the road section. If the average speed is above the speed limit, data captured by the system can be used as evidence for prosecution. Drivers will be more inclined to observe their speed over the entire section of road being monitored by ASCS, rather than just at individual spots. Overseas experience has revealed that after installing ASCS, both the crash rates and number of casualties at the concerned road sections have generally declined.

PROPOSAL

6. The Transport Department, with the support of the Transport and Housing Bureau, proposes to carry out a trial on ASCS at the SBB of the Hong Kong Shenzhen Western Corridor. The SBB is chosen as it has around 4 km of high speed road with variable speed limit signs at a maximum of 100 km/hr. The deterrent effect of ASCS over a long distance and its applicability on roads with variable speed limits can be tested in the trial. The Hong Kong Police Force will provide all necessary support for the trial, including using the system for enforcement and prosecution. The Electrical and Mechanical Services Trading Fund (EMSTF) has carried out a preliminary study at the SBB and advised that it is feasible to install ASCS equipment thereat for conducting the trial. A plan showing the proposed site for the ASCS trial is at the **Annex**.

7. Digital cameras will be installed in housings mounted on existing gantries at the entry and exit points of the road section to be monitored. The digital cameras will take time-stamped photographs of all the vehicles at both entry and exit points. The ASCS adopting ANPR technology will match the licence plate numbers from the photographs taken and identify the time at which the vehicles pass the entry and exit points. From these data the average speed of the vehicles can be calculated, ascertaining whether there has been a violation of speed limit.

8. If the average speed of the vehicle is below the speed limit, the captured data including photographs will be immediately discarded. Otherwise, captured data will be downloaded to the Police's computer system for processing. If the Police, upon examination of relevant evidence [2] collected, consider that there is a violation of law, the offending vehicle and responsible driver will be identified for prosecution actions.

9. We plan to conduct a 12-month trial scheme to test the reliability of the system, and the acceptability to the court of the evidence so collected.

10. As far as privacy is concerned, ASCS uses ANPR detection technology to identify the license plate of every vehicle passing through the entrance and exit of the road section for matching whilst the conventional SEC will only collect data / photographs of the violating vehicles. To address the privacy concern, we will closely follow the Data Protection Principles set out in the Personal Data (Privacy) Ordinance (Cap. 486). We will devise the following measures :

(a) only data showing a speeding offence will be retained for prosecution. All other data and images will be immediately discarded on the spot;

(b) all images recorded by ASCS are encrypted at time of capture, making them not recognisable to unauthorised persons, to ensure authenticity of the evidence before further processing; and

(c) before the commencement of the trial scheme, the Administration will publicise the scheme including relevant information to be collected for processing. In addition, advisory signs will be erected on the road sections where the trial scheme is to be carried out.

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[2] Relevant evidence includes: photographs of the vehicle showing the vehicle number plate and the date / time entering and leaving the concerned road section; photographs showing the posted speed limit on the variable speed limit signs in the concerned road section; and the calculated average speed of the vehicle in the road section concerned.

11. To ensure compliance with the Data Protection Principles, we will engage a consultant to conduct a Privacy Impact Assessment (PIA) to identify any privacy issues arising from the operation of the ASCS for prosecution of speeding cases and to evaluate the privacy risk associated with the proposal. Upon completion of the PIA, mitigation measures will be recommended for incorporation into the design of the ASCS. Upon installation of the ASCS, a Privacy Compliance Audit will also be conducted to verify compliance of the ASCS with privacy policies, Data Protection Principles, and code of practice on handling of related personal data before commissioning of the system.

12. If the trial scheme is proved to be effective, the Police will continue using the ASCS at the SBB for enforcement. Further expansion of the ASCS may also be considered.

IMPLEMENTATION PROGRAMME

13. Subject to the support of Members and funding approval of the Finance Committee, we plan to carry out the ASCS trial scheme according to the following programme:

	Activity	Target Completion Date
(a)	Engagement of Privacy Consultant to conduct PIA for design of ASCS	June 2013
(b)	Completion of ASCS design for tendering	July 2013
(c)	Award of ASCS contract	December 2013
(d)	Manufacture and delivery of equipment on site	July 2014
(e)	Equipment installation and set up	November 2014
(f)	Acceptance testing and commissioning of the trial	December 2014
(g)	Completion of the trial	December 2015

FINANCIAL IMPLICATIONS

14. We estimate that the proposed procurement and installation of the ASCS will require about $11.267 million in capital cost, with the breakdown as follows :

		$ million
(a)	Camera system and ancillary equipment	3.620
(b)	Computer system, software and ancillary equipment	1.410
(c)	On-site installation (including civil works), testing, commissioning and training	3.940
(d)	Contingencies (10% of items (a) to (c))	0.897
(e)	EMSTF project management charges	1.400
	Total	**11.267**

15. We intend to phase the expenditure as follows :

Year	**$ million**
2013-2014	0.510
2014-2015	7.463
2015-2016	3.294
Total	**11.267**

16. There is no recurrent expenditure involved during the trial as there will be a free maintenance and spare parts warranty for the first year after the commissioning of the proposed ASCS. However, should the ASCS be retained at the SBB after the trial, we estimate that the annual recurrent expenditure for the ASCS hardware maintenance and telecommunication lines rental would amount to about $1.744 million.

WAY FORWARD

17. Subject to Members' views on the proposal, we plan to seek the Finance Committee's funding approval before July 2013 to implement this proposal.

ADVICE SOUGHT

18. Members are invited to comment on and support the proposal to carry out the ASCS trial scheme at the SBB.

Transport and Housing Bureau
May 2013

附件 **ANNEX**

偵察平均車速攝影機系統試驗計劃的建議安裝地點
Proposed Site for Average Speed Camera System Trial Scheme