

For discussion
15 February 2019

Legislative Council Panel on Security

Replacement of Marine Police Central Command System and its Seven Electro-Optical Sensors (EOS) as well as the Procurement of New EOS

Purpose

This paper aims to consult the Panel on the proposal for replacing the Central Command System (CCS) and its seven land-based Electro-Optical Sensors (EOS), and for procuring two new EOS, for the Marine Region of the Hong Kong Police Force (HKPF).

Background

2. The CCS is a system of the Marine Police for monitoring the offshore waters and co-ordinating marine operations by the Marine Region. It comprises the EOS, central servers, consoles, workstation hardware and software, etc. The EOS are for the detection, recognition and identification of objects at sea. Each EOS comprises (a) a long range daylight camera; (b) a thermal imager (TI) which works by detecting the temperature difference between different objects at night and during periods with poor visibility (e.g. on foggy days); and (c) a pan-tilt platform for controlling the EOS. The existing CCS and its seven EOS have been in use since October 2010 and have a projected lifespan of approximately ten years.

3. Operators at the HKPF's Marine Regional Command and Control Centre (RCCC MAR) are able to conduct round-the-clock monitoring over the majority of the Hong Kong Special Administrative Region (HKSAR) sea boundary and waters within. The EOS are usually placed at remote external locations, allowing for suspicious vessels or targets to be located and tracked during day time, at night and during periods of low visibility, and displayed on the console at the RCCC MAR. Locations not covered by the CCS often require monitoring by police craft deployed there. In this regard, the HKPF proposes installing EOS at two additional locations in order to strengthen the operational capability and efficiency of the Marine Police in law enforcement and protection of public safety (e.g. assisting in maritime search-and-rescue (SAR) operations).

4. The CCS together with its EOS is an integral component in effectively safeguarding the HKSAR sea boundary against illegal activities, such as illegal immigration and smuggling, as well as establishing a potent defence system against the threat of maritime terrorism. Between 2016 and 2018, there were 437 illegal immigration cases detected with 1 295 illegal immigrants (IIs) arrested by Marine Region. In addition, 94 smuggling cases were detected with 97 persons arrested and over \$266 million of contraband seized.

Proposal and Justifications

5. The existing system has been in use for over eight years since its rollout in October 2010. Its maintenance contract will expire in late 2021 and the system will be approaching the end of its serviceable life by then. Furthermore, the system has experienced increasing fatigue problems in recent years, causing frequent service suspension. The TIs, which are a key component of CCS, are showing clear signs of ageing with associated maintenance issues. There is thus a need for the HKPF to start preparation work for replacement by mid-2019 in order to allow sufficient lead time for tendering, system development and testing. According to our plan, the proposed system will be commissioned in 2021-22.

6. Due to the advances in technology in recent years, when replacing the old system, we will upgrade the system at the same time. The main improvements include:

- (a) with the increase in the number of EOS, the coverage of the new CCS will be expanded¹, thereby having better detection capability; and
- (b) the development of EOS technology brings about more choices of new equipment and improvement in the video quality, which shall facilitate the HKPF's better recognition of target vessels and a swifter evaluation of incidents at sea and of the response required.

¹ Including seven existing EOS which will be replaced (at East Ping Chau, Tai Long Au, Waglan Island, Bluff Head, Shek Kwu Chau, Kau Yi Chau and Black Point), two proposed additional EOS (at Tsim Bei Tsui and Fan Lau), as well as the one at the Hong Kong-Zhuhai-Macao Bridge (HZMB) Hong Kong Link Road which was installed in 2018 (the installation of which was funded by the "Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road" project (844TH PWSC(2011-12)31). This proposal only involves re-connecting the EOS to the new CCS).

7. The two additional EOS will be installed at Tsim Bei Tsui (TBT) in Yuen Long and at Fan Lau (FL) on the south-western tip of Lantau Island, extending the coverage of the CCS to these two areas, thereby improving the detection capability of the system.

8. TBT, located at the western side of Hong Kong in close proximity to the Mainland, has seen frequent occurrence of illegal entry and cross-boundary smuggling of high value contraband. Between 2016 and 2018, there were 29 illegal immigration cases with 55 IIs arrested. During the same period, there were 26 smuggling cases detected with an estimated seizure value of over \$65.69 million and 15 persons arrested. The proposed EOS would strengthen the coverage in the north of Deep Bay, and facilitate the two Police Barge Operating Platforms located in Deep Bay as well as the shore-based TBT Police Post in effectively deploying small craft to intercept these IIs and interdict smuggling activities.

9. FL, on the south-western tip of Lantau Island, is only one nautical mile from the Boundary of Administration and is a location of landing of IIs. Between 2016 and 2018, seven illegal immigration cases were detected in the area with 23 IIs arrested, and three smuggling cases were detected with an estimated seizure value of \$6.34 million.

10. FL is also adjacent to the busy high-speed ferry channel between Hong Kong and Macau. Over the past few years, there have been a number of cases of vessel collisions. One collision occurred to the west of FL leaving the body of the sampan's coxswain missing; another incident occurred close to the nearby island of Siu A Chau, with over 120 injured. The sea area surrounding FL is not only subject to maritime safety issues, but also offences such as illegal trawling. To tackle the maritime incidents in the vicinity of FL, we propose installing an EOS there to enable the Marine Police to effectively and quickly vector appropriate units to the scene to conduct SAR operations.

11. The proposal to install the EOS at TBT and FL will enable virtual patrols to be conducted through RCCC MAR, allowing for a more comprehensive monitoring of these areas of strong policing and security interest. In handling incidents, the Marine Police will be able to quickly deploy and more effectively manage resources. When undertaking SAR operations, the EOS video signals will enable commanders at RCCC MAR to make an effective early appraisal of the emergency situation without the need to wait for a police vessel to arrive at scene to conduct evaluation and make reports.

Financial Implications

Non-recurrent expenditure

12. The total non-recurrent expenditure is estimated to be \$54.229 million². The detailed breakdown is as follows:

	\$ '000
(a) EOS hardware and software	20,363
(b) CCS central servers, consoles, workstation hardware and software	12,430
(c) Communications network service and telecommunications equipment	6,251
(d) Site preparation	4,600
(e) System implementation and support services	5,655
(f) Contingency [10% of items (a) to (e) above]	4,930
Total	54,229

13. The estimated cash flow requirements are as follows:

Year	\$ '000
2019-20	2,725
2020-21	3,391
2021-22	45,711
2022-23	2,402
Total	54,229

² The cost includes the installation and connection of the new EOS at the seven existing sites (i.e. East Ping Chau, Tai Long Au, Waglan Island, Bluff Head, Shek Kwu Chau, Kau Yi Chau and Black Point), two new sites (i.e. TBT and FL) and the re-connection of the existing EOS at the HZMB Hong Kong Link Road to the new CCS.

Recurrent expenditure

14. The HKPF estimates that when the proposed system is initially launched in 2021-22, the annual recurrent expenditure is \$6,283,500 (including recurrent expenditure of \$5,380,500 and \$903,000 for the existing and proposed systems respectively). The recurrent expenditure of the proposed system will increase to \$7,829,000 in a full year from 2023-24 and onwards, representing a decrease of about \$2,932,000 from that of the existing system which is about \$10,761,000³. No additional staff cost will be incurred.

Implementation Schedule

15. The HKPF estimates the schedule for project implementation as follows:

Activity	Tentative Completion Date
(a) Tender preparation	March 2020
(b) Tendering and contract award	September 2020
(c) Remote site preparation	March 2021
(d) Marine equipment room and RCCC site preparation	March 2021
(e) Equipment delivery and installation	May 2021
(f) Acceptance tests, training and commissioning	September 2021

Advice Sought

16. Members are invited to comment on the above proposal. Subject to Members' comments on the proposal, we plan to seek funding approval from the Legislative Council Finance Committee in accordance with established procedures.

**Security Bureau
Hong Kong Police Force
February 2019**

³ The amount includes the annual maintenance cost of the system and rental cost of the leased lines.