

## ITEM FOR FINANCE COMMITTEE

### CAPITAL WORKS RESERVE FUND

### HEAD 708 – CAPITAL SUBVENTIONS AND MAJOR SYSTEMS AND EQUIPMENT

#### Customs and Excise Department

#### New Subhead “Replacement of integrated radio system for the Customs Drug Investigation Bureau”

Members are invited to approve a new commitment of \$52,000,000 for the Customs Drug Investigation Bureau of the Customs and Excise Department to replace its existing radio system with a new integrated radio system.

### PROBLEM

The existing radio system of the Customs Drug Investigation Bureau (CDIB) of the Customs and Excise Department (C&ED) has been used for more than 22 years and is reaching the end of its serviceable life. It cannot be extended to meet the changing operational needs of CDIB.

### PROPOSAL

2. The Commissioner of Customs and Excise, with the support of the Secretary for Security, proposes to create a new commitment of \$52,000,000 to replace the existing radio system of CDIB by a new integrated radio system.

### JUSTIFICATION

#### Need to Replace the Existing Radio System

3. The existing system has been developed on an incremental basis to the present scale over the past 22 years. Apart from an increasing breakdown rate, the existing system experiences the following major problems –

/(a) .....

- (a) the proprietary technology on which the existing system is based is becoming obsolete and is being phased out. It is increasingly difficult to identify suitable spare parts in the market for repair and maintenance. Long-term maintenance of the system is considered infeasible;
- (b) the existing system, which was designed in the mid-1980s, does not provide full radio coverage for all inhabited areas in Hong Kong today. Radio blind spots have been on the rise as a result of urban development and an increasing number of high-rise buildings over the past two decades;
- (c) the existing system was built on a conventional analogue platform and based on narrowband technology. It is not fully compatible with more advanced equipment introduced in recent years, nor can it be upgraded to meet the latest operational needs of CDIB such as support for fleet deployment; and
- (d) based on an encryption technology that is being phased out, the existing system is susceptible to interference by other radio communication systems operating in adjacent frequency bands.

4. To ensure that CDIB operations continue to be underpinned by effective, efficient and secure radio communication, it is necessary to acquire a new replacement system employing up-to-date technology in radio communication for meeting present day drug investigation needs.

### **The Proposed System**

5. The proposed system will take advantage of the new technologies available and provide better support for the work of CDIB. Its key benefits are set out below –

- (a) coverage: the proposed system will provide more comprehensive and extensive territory-wide radio coverage to support CDIB operations. It will also be equipped with portable and enhanced repeaters which provide for coverage in circumstances when the operating environment may affect reception;
- (b) adoption of digital technology: taking advantage of the latest wireless broadband technologies, the proposed system can offer improved voice quality and better protection against interference;
- (c) responsiveness: dedicated to meeting CDIB's requirements, the proposed system guarantees quick and efficient communications among officers and teams in action. This is essential in ensuring effective, efficient and safe field operations;

/(d) .....

- (d) support for fast information transmission: the proposed system can support fast information transmission which in turn facilitates more effective and efficient enforcement operations against drug crimes and other serious criminal activities;
- (e) leverage on open standards: the proposed system will be built on open standards which allow easy maintenance and upgrading, equipment sourcing from multiple vendors, and better interface with other sub-systems when necessary; and
- (f) system reliability and effectiveness: the proposed system supports the redundancy and backup mechanism to ensure system reliability, as well as advanced network topology to increase the effectiveness of channel usage.

6. A pilot test carried out between June and August 2008, at a non-recurrent expenditure of \$227,600, has proved the viability and capabilities of the proposed system.

**FINANCIAL IMPLICATONS**

**Non-recurrent Expenditure**

7. We estimate that installation of the proposed system will require non-recurrent expenditure of \$52,000,000, broken down as follows –

	<b>\$'000</b>
(a) Radio transceivers (portable and mobile radios)	7,950
(b) Radio repeaters (fixed, vehicular and portable repeaters)	29,050
(c) Central management system	7,000
(d) Despatching sub-system	1,250
(e) Vehicle location sub-system	5,000
(f) Installation and engineering services	1,750
<b>Total</b>	<b>52,000</b>

8. On paragraph 7(a) above, the estimate of \$7,950,000 is for the procurement of 180 sets of portable radios with specially-fitted audio gears for use by individual officers during operations, and 25 sets of mobile radios with special installations on vehicles.

9. On paragraph 7(b) above, the estimate of \$29,050,000 is for the procurement of 57 sets of fixed repeaters to be installed at hilltop or rooftop sites for providing more comprehensive radio coverage over the territory, and five sets of vehicular repeaters and two sets of portable repeaters for strengthening the local radio coverage in highly congested environments.

10. On paragraph 7(c) above, the estimate of \$7,000,000 is for the procurement of a central switch for connecting the fixed repeaters, the despatching workstations and a network management system for the maintenance and trouble-shooting of the networked equipment.

11. On paragraph 7(d) above, the estimate of \$1,250,000 is for the procurement of five sets of despatching workstations to be installed in the operation control room for communication with field officers.

12. On paragraph 7(e) above, the estimate of \$5,000,000 is for the procurement of a vehicle location sub-system for fleet management.

13. On paragraph 7(f) above, the estimate of \$1,750,000 is for the installation and engineering services during the system development phase, including system design and installation, testing and commissioning, and training.

14. The estimated cash flow requirement for the proposed replacement is as follows –

<b>Financial Year</b>	<b>\$'000</b>
2009-10	15,000
2010-11	25,000
2011-12	12,000
<b>Total</b>	<b>52,000</b>

**/Recurrent .....**

### Recurrent Expenditure

15. We estimate that the recurrent expenditure of the replacement project is \$5,640,000 per annum from 2013-14 onwards. This will be partly offset by the annual savings of \$1,110,000 from the existing system, including expenses on maintenance charges, consumables, radio licence fees and line rentals. The detailed breakdown is as follows –

	2012-13 \$'000	2013-14 and onwards \$'000
The proposed system		
(a) System maintenance, consumables and spare parts	_ <sup>Note 1</sup>	5,040
(b) Radio licence fees	120	120
(c) Leased line rentals	480	480
Sub-total	<u>600</u>	<u>5,640</u>
Less: Savings from the existing system		
(d) System maintenance, consumables and spare parts	(340) <sup>Note 2</sup>	(850) <sup>Note 3</sup>
(e) Radio licence fees	(60)	(60)
(f) Leased line rentals	(200)	(200)
Sub-total	<u>(600)</u>	<u>(1,110)</u>
<b>Total</b>	<u><b>-</b></u>	<u><b>4,530</b></u>

16. On paragraph 15(a) above, the estimated annual expenditure of \$5,040,000 is for the maintenance service (including the costs of labour and materials for maintenance service for all equipment) and the procurement of consumables and equipment spare parts for the proposed system (including spare portable radios, radio batteries and antenna, etc.).

17. On paragraph 15(b) above, the estimated annual expenditure of \$120,000 is for the radio licence fees for portable radios, mobile radio sets and repeaters.

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Note 1 Free maintenance warranty will be provided for the first year after the commissioning of the proposed system, i.e. from April 2012 to March 2013.

Note 2 With the proposed system becoming operative in 2012-13, C&ED will keep but scale down the existing system as a backup.

Note 3 With the proposed system fully implemented in 2013-14, the existing system will cease operation.

18. On paragraph 15(c) above, the estimated annual expenditure of \$480,000 is for the leased line rentals for certain repeater sites requiring leased line connections.

19. The net additional annual recurrent expenditure of \$4,530,000 from 2013-14 onwards is mainly due to the increased requirements in maintenance, consumables and spare parts arising from the improved system. C&ED will absorb the additional recurrent expenditure from within its existing resources.

### **IMPLEMENTATION PLAN**

20. We plan to implement the replacement project according to the following schedule –

<b>Activity</b>	<b>Target completion date</b>
(a) System design and tender preparation	July 2009
(b) Tendering and award of contract	December 2009
(c) Approval of system design	January 2010
(d) Installation of equipment	January 2012
(e) Overall system alignment, acceptance test and training	March 2012
(f) System commissioning	April 2012

### **PUBLIC CONSULTATION**

21. We consulted the Legislative Council Panel on Security on the proposal on 3 February 2009. Members had no objection to the proposal. While accepting that making use of the generic Unified Digital Communications Platform (UDCP) built on the Third Generation Command and Control Communications System (CCIII) of the Hong Kong Police Force (HKPF) would not be appropriate (as explained in paragraph 22 below), one Member enquired whether the proposed system could be built on the existing dedicated communications systems operated by other law enforcement agencies (LEAs). We responded at the Panel meeting and subsequently issued a written response to Members on 31 March 2009. Our response is summarised in paragraph 23 below.

**/OTHER .....**

**OTHER PROPOSALS CONSIDERED**

22. Consideration has been given to making use of the UDCP built on the CCIII of HKPF. The UDCP, being a generic platform open to general use by a large number of users of HKPF and other government departments, is however found unable to meet the operational needs of CDIB as it cannot offer the level of security, the capability of rapid and reliable response, and fast information transmission required by the nature of the work of CDIB.

23. We have also critically examined the feasibility of shared use of dedicated radio systems between C&ED and other LEAs, including that operated by the Crime Wing of HKPF, but concluded that this is not a viable solution. Generally speaking, such systems were each purpose-built to support the specific functions of the LEAs concerned. To share the use of these systems would involve considerable costs of system modification to also cater for the operational requirements of CDIB. In view of the relatively short remaining life span of the existing systems of the other LEAs, the shared use option is not particularly cost-effective compared with the proposal of replacing the existing radio system for CDIB with a new one, especially if we take into account the latest technological features in the proposed radio system.

24. As there are no other more practical or cost effective alternatives, we consider that replacing the existing radio system by a new one that provides distinctive features to meet CDIB's operational needs is the only feasible option.

**BACKGROUND**

25. CDIB is a dedicated formation in C&ED specialised in investigation to combat serious crimes in relation to dangerous drugs. CDIB conducts a wide range of enforcement operations along the boundary, entry/exit points of Hong Kong as well as within the territory to fight against the manufacturing, trafficking, import and export of dangerous drugs, and organised drug syndicates. Operating since 1986, the existing radio system used by CDIB plays a critical part in supporting its investigations and operations.

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