

For discussion
on 3 February 2009

Legislative Council Panel on Security

Replacement of Radio Communications System for the Customs Drug Investigation Bureau of the Customs and Excise Department

PURPOSE

This paper seeks Members' support for the proposal to replace the existing radio communications system of the Customs Drug Investigation Bureau (CDIB) of the Customs and Excise Department (C&ED) with a new Integrated Radio System (the proposed system). In use for 22 years, the existing system is reaching the end of its serviceable life and cannot be extended to meet the changing operational needs of CDIB.

BACKGROUND

2. 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, at entry/exit points of Hong Kong, as well as within the territory generally to fight against the manufacturing, trafficking, and the import and export of dangerous drugs, and organised drug syndicates. Operating since 1986, the existing radio communications system used by CDIB plays a critical part in supporting investigations and operations.

JUSTIFICATIONS

Need for replacement of the existing system

3. The existing system has been developed in a piece-meal approach to the present scale over the past 22 years. The existing system

has far exceeded its normal life span of ten to 15 years. Apart from an increasing breakdown rate, the existing system experiences the following major problems -

- (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 communications 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 without delay. Failure to do so may seriously jeopardise the effectiveness of anti-drug enforcement work in future.

The proposed system

5. The proposed system will take advantage of the latest 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 comprehensive and extensive territory-wide radio coverage for supporting CDIB operations. It will also be equipped with portable and enhanced repeaters which provide for coverage in circumstances when physical environment may affect reception;
 - (b) adoption of digital technology: taking advantage of the latest broadband wireless technologies, the proposed system can offer improved voice quality and better protection against interference.
 - (c) responsiveness: dedicated to meet 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) 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 necessary sub-systems; and
 - (f) system reliability and effectiveness: the proposed system supports 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 has also proved the viability and capabilities of the proposed system.

7. A separate exercise is being undertaken by C&ED to replace its general radio communications system. Replacement of the current 30-year old analogue system is underway by making use of the Unified Digital Communications Platform (UDCP) built on the Third Generation Command and Control Communications System of the Hong Kong Police Force (HKPF). The replacement system, however, cannot meet the operational needs of CDIB as the UDCP, being a generic platform open to general use by a large number of users of HKPF, C&ED and other government departments, 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. It would need its own replacement system as now proposed in the paper.

FINANCIAL IMPLICATONS

Non-recurrent cost

8. We estimate that the non-recurrent cost of the replacement of CDIB's existing radio communications system by the proposed system will be \$52.000 million over a three-year period from 2009-10 to 2011-12. A detailed breakdown is at **Annex A**.

Recurrent cost

9. The annual recurrent cost of the existing radio communications system is \$1.110 million, including costs of maintenance, consumables, radio licence fee and line rental. The estimated recurrent cost of the proposed system is \$5.640 million in a full year from 2013-14 onwards. The additional recurrent cost of \$4.530 million per annum is mainly due to the increased requirements in maintenance, consumables and spare parts arising from the improved system. A detailed breakdown is at **Annex B**. C&ED will absorb the additional recurrent cost from within its existing resources.

IMPLEMENTAION PLAN

10. Subject to Members' comments on the proposal, we plan to

seek funding approval from the Finance Committee in April 2009 with a view to implementing the proposed system by April 2012. An implementation plan is at **Annex C**.

Security Bureau
Customs and Excise Department
January 2009

Annex A

**Non-recurrent Cost of the
Proposed Integrated Radio System for the
Customs Drug Investigation Bureau**

		2009-10 \$'000	2010-11 \$'000	2011-12 \$'000	Total \$'000
(a)	Radio transceivers (portable and mobile radios)			7,950	7,950
(b)	Radio repeaters (fixed, vehicular and portable repeaters)	7,500	18,050	3,500	29,050
(c)	Central Management System	7,000			7,000
(d)	Dispatching Sub-system		1,250		1,250
(e)	Vehicle Location Sub-system		5,000		5,000
(f)	Installation and engineering services	500	700	550	1,750
	Total:	15,000	25,000	12,000	52,000

**Recurrent Cost of the
Proposed Integrated Radio System for the
Customs Drug Investigation Bureau**

	2012-13 \$'000	2013-14 and onwards \$'000
<u>The Proposed System</u>		
(a) System maintenance, consumables and spare parts	0 ⁽¹⁾	5,040
(b) Radio licence fee	120	120
(c) Leased line rental	480	480
Sub-total:	600	5,640
<u>Less: Savings from the Existing System</u>		
(a) System maintenance, consumables and spare parts	(340) ⁽²⁾	(850) ⁽³⁾
(b) Radio licence fee	(60)	(60)
(c) Leased line rental	(200)	(200)
Sub-total:	(600)	(1,110)
Total:	0	4,530

Notes

- (1) Free maintenance warranty for the first year of system commissioning, i.e. April 2012 to March 2013.
- (2) With the new system becoming operative in the first year, C&ED will keep but scale down the existing system as a backup.
- (3) With the new system fully implemented in the second year, the existing system will cease operation.

**Implementation Plan for the
Proposed Integrated Radio System for the
Customs Drug Investigation Bureau**

Activity	Target Date
(a) Preliminary system design and tender preparation	Jun 2009– Jul 2009
(b) Tendering and award of contract for the acquisition of central equipment and part of repeater stations	Aug 2009–Dec 2009
(c) Approval of system design	Dec 2009–Jan 2010
(d) Installation of equipment in item (b) above	Feb 2010–Jun 2010
(e) Acquisition and installation of vehicle location sub-system and repeater stations	Jul 2010–May 2011
(f) Acquisition and installation of portable and mobile radios	Jun 2011–Jan 2012
(g) Overall system alignment, acceptance test and training	Feb 2012–Mar 2012
(h) Service commissioning	Apr 2012