# **ITEM FOR FINANCE COMMITTEE**

### CAPITAL WORKS RESERVE FUND HEAD 708 - CAPITAL SUBVENTIONS AND MAJOR SYSTEMS AND EQUIPMENT Independent Commission Against Corruption New subhead "Replacement of Radio Communications System of the Operations Department"

Members are invited to approve a new commitment of \$78,730,000 for the replacement of the existing radio communications system of the Operations Department of the Independent Commission Against Corruption.

#### PROBLEM

The Independent Commission Against Corruption (ICAC) needs to replace the existing radio communications system of the Operations Department in order to ensure continued operational capability.

#### PROPOSAL

2. The Commissioner of ICAC proposes to create a new commitment of \$78,730,000 for replacing the existing radio communications system with a new system (the proposed system).

## JUSTIFICATION

#### Need for replacement

3. Built on a conventional narrowband technology, the existing system, which has been operating since 2002 and is approaching the end of its normal life span of ten to 15 years, is encountering the following major problems –

- (a) the technology employed by the existing system is now obsolete and phased out. Repair and maintenance of the system is becoming increasingly difficult as a result of diminishing availability or non-availability of spare parts. Long-term maintenance of the system is considered infeasible;
- (b) the frequency band allocated to the existing radio channels is susceptible to interference from other radios commonly available in the local market and operating in similar frequency bands. The existing system, however, cannot be upgraded to operate in other interference-free frequency bands;
- (c) the existing system is not compatible with more advanced equipment introduced in recent years, rendering it infeasible for an upgrade to provide advanced functions like higher encryption level; and
- (d) there has been a significant deterioration of radio communications coverage in the past decade as a result of rapid urban development. Coverage expansion or capacity improvement for the existing system is not feasible due to its obsolete technology.

4. There is an imminent need to acquire a new system in order to ensure the efficiency and effectiveness in discharging the enforcement duties by the Operations Department.

## The proposed system and its benefits

5. The proposed system will replace the existing obsolete system using the latest wireless technologies and system design. It will provide better support for the work of the Operations Department through the following key benefits –

- (a) adopting design of open standards which are widely used by the industry, easy maintenance and upgrading as well as equipment sourcing from multiple vendors can be assured for the proposed system;
- (b) the proposed system will be operating in dedicated frequency bands allocated solely to the Government. The use of that frequency bands will not interfere with other licensed civil radio communications which are operating in different frequencies. Furthermore, radio equipment capable of operating in the said dedicated frequency bands is not commercially available to civilian users. As a result, the proposed system will be less susceptible to interference caused by illegal radio users;

/(c) .....

- (c) under the proposed system, radio communications will be encrypted using the Advanced Encryption Standard (AES) algorithm. AES has been widely used worldwide as the official government encryption standard for encrypting all forms of electronic data or wireless traffic to ensure confidentiality of the government information. In addition, the proposed system will adopt the latest authentication technology whereby only registered radio equipment is authorized to use the proposed system. With the AES and authentication algorithms, the safety and security of the proposed system will be greatly enhanced;
- (d) with capabilities provided by the latest technologies, the proposed system can support more simultaneous users and offer improved voice quality. The proposed system can also support fast information transmission, and allow automatic handover of a communication session to other repeater <sup>1</sup> without termination so as to ensure continuation of communication when users cross the repeater coverage boundaries, which in turn facilitates more effective and efficient operations; and
- (e) the proposed system will have 60 repeater stations, all of which will be constructed on either government land or government premises across the territory (as opposed to 21 in the existing system). They can therefore provide more comprehensive radio communications coverage, particularly in some highly-congested urban areas.

## FINANCIAL IMPLICATIONS

#### Non-recurrent Expenditure

6. The estimated non-recurrent expenditure over a three-year period from 2014-15 to 2016-17 is \$78,730,000 with breakdown as follows –

		2014-15 \$'000	2015-16 \$'000	2016-17 \$'000	Total \$'000
(a)	Radio transceivers (portable and mobile radios)	-	4,250	1,500	5,750
(b)	Radio repeaters	-	8,750	30,000	38,750
(c)	Central management system	-	14,800	3,500	18,300
(d)	Dispatcher terminals	-	1,500	-	1,500
(e)	Installation and engineering services	1,250 <sup>2</sup>	3,000	3,750	8,000
(f)	Contingency	-	2,930	3,500	6,430
	Total:	1,250	35,230	42,250	78,730

<sup>/7. .....</sup> 

<sup>&</sup>lt;sup>1</sup> A repeater receives a signal and re-transmits it so that signal can cover longer distance.

<sup>&</sup>lt;sup>2</sup> Stage payment after completion of system design.

7. On paragraph 6(a) above, the estimated expenditure of \$5,750,000 is for the procurement of 345 sets of portable and mobile radios (including accessories) for use by officers during investigations and operations.

8. On paragraph 6(b) above, the estimated expenditure of \$38,750,000 is for the procurement of 60 repeater stations to be constructed at various government sites for providing more comprehensive radio coverage over the territory.

9. On paragraph 6(c) above, the estimated expenditure of \$18,300,000 is for the procurement of central management system including servers, communication interface and network equipment for the management, maintenance and trouble-shooting of the proposed system.

10. On paragraph 6(d) above, the estimated expenditure of \$1,500,000 is for the procurement of six sets of dispatcher terminals to be installed in the operation control rooms for communication with officers.

11. On paragraph 6(e) above, the estimated expenditure of \$8,000,000 is for the installation and engineering services during the system implementation phases including system design, installation, testing, commissioning and training.

12. On paragraph 6(f) above, the estimated expenditure of \$6,430,000 represents 10% contingency cost for items as set out in paragraph 6(a) to (d) above.

## **Recurrent Expenditure**

13. The proposed system will entail an annual recurrent expenditure of \$1,406,000 starting from 2018-19. This will be partly offset by the annual savings of \$297,000 from the existing system including expenses on the spare parts, consumables and radio license fees. The net additional annual expenditure is \$1,109,000, broken down as follows –

		From 2018-19	
		2017-18 \$'000	onwards \$'000
The proposed system			
(a) Spare parts and consumables		-	1,249
(b) Radio licence fee		157	157
	Sub-total:	157	1,406

	2017-18 \$'000	From 2018-19 onwards \$'000			
Less: Savings from the existing system					
(c) Spare parts and consumables	(222)	(222)			
(d) Radio licence fee	(75)	(75)			
Sub-total:	(297)	(297)			
Total:	(140)	1,109			

14. On paragraph 13(a) above, the estimated annual expenditure of \$1,249,000 is for the procurement of equipment spare parts and consumables (including batteries and antennae) for the maintenance of the proposed system.

15. On paragraph 13(b) above, the estimated annual expenditure of \$157,000 is for the radio licence fees for the radio transceivers and repeaters.

16. The net additional annual recurrent expenditure of \$1,109,000 starting from 2018-19 is due to the increased requirements in spare parts and consumables arising from the proposed system. The ICAC will absorb from within its existing resources this additional recurrent expenditure arising from the proposed system.

#### **IMPLEMENTATION PLAN**

17. We plan to implement the proposed system according to the following schedule –

	Activity	Target Completion Date
(a)	Preliminary system design and tendering	June 2015
(b)	System design	September 2015
(c)	Equipment manufacture and delivery	June 2016
(d)	Installation, acceptance test, training and system commissioning	February 2017

18. Upon the commissioning of the proposed system, the existing system will be disposed of in accordance with the disposal procedures stipulated in the Stores and Procurement Regulations of the Government, and all the related classified waste materials will be destroyed in accordance with the Security Regulations.

## PUBLIC CONSULTATION

19. On 18 March 2014, we consulted the Panel on Security of the Legislative Council. Members supported the proposal but requested additional information on (a) the encryption technology to be deployed in the proposed system; (b) whether there would be any interference between the proposed system and civilian radio communications systems; (c) whether the repeater stations under the proposed system would be constructed on government land or private land; and (d) how the repeater stations of the existing radio communications system would be disposed of. We provided the information and it was circulated to Members vide LC Paper No. CB(2)1447/13-14 on 7 May 2014. The information is also outlined in paragraphs 5(b) to (c), 5(e) and 18 above.

## BACKGROUND

20. The Operations Department is the investigative arm of the ICAC being responsible for conducting investigations and enforcement operations to eradicate corruption. An effective and efficient radio communications system plays an integral part in supporting investigations and operations carried out by the officers of the Operations Department in the fight against corruption.

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Independent Commission Against Corruption June 2014