

## **ITEM FOR FINANCE COMMITTEE**

### **CAPITAL WORKS RESERVE FUND**

#### **HEAD 710 – COMPUTERISATION**

##### **Customs and Excise Department**

##### **New Subhead “Technology refreshment of Air Cargo Clearance System for the Customs and Excise Department”**

Members are invited to approve a new commitment of \$45,972,000 for replacing the ageing components of the Air Cargo Clearance System for the Customs and Excise Department.

### **PROBLEM**

The existing Air Cargo Clearance System (ACCS) at the Hong Kong International Airport (HKIA) has been in use for more than ten years. Most of the hardware and software components of the ACCS are becoming obsolete. Failure to replace the ageing components of the ACCS in a timely manner will jeopardise the speedy customs clearance service currently provided by the Customs and Excise Department (C&ED).

### **PROPOSAL**

2. The Commissioner of Customs and Excise, with the support of the Secretary for Commerce and Economic Development and the Government Chief Information Officer, proposes to create a new commitment of \$45,972,000 to replace the ageing components of the ACCS.

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## JUSTIFICATION

### Need for Replacing the Ageing Components of the ACCS

3. In 1998, C&ED launched the ACCS to enhance customs clearance of air cargoes, a process which was hitherto carried out entirely on a manual basis. The ACCS enables C&ED to provide faster customs clearance, enhance its cargo handling capacity, improve security and accuracy in cargo selection, and achieve more efficient analysis of data including the smuggling trend.

4. The existing ACCS has been in use for over ten years. Its major components, including the servers, operating systems, database management systems, etc., are becoming obsolete. In addition, the existing maintenance vendor has indicated that the support service for some major hardware components might cease from early 2011 due to the lack of spare parts.

5. C&ED proposes to replace the following ageing components of the ACCS –

- (a) the hardware for all servers;
- (b) the associated software, including operating systems and database management systems; and
- (c) network equipment, including routers and firewalls, for connection to the information technology (IT) systems of the cargo operators.

### Cost and Benefit Analysis

6. We expect that the proposal will bring the following benefits –

- (a) timely replacement of the ageing components of the system would ensure its proper functioning, thereby sustaining the present speedy and reliable customs clearance service;
- (b) in replacing the ageing equipment, we will bring in components adopting latest technology and design the system on a scalable basis. It will give C&ED added room to handle future growth in air cargo traffic<sup>1</sup>, including allowing more cargo operators to use the system;

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<sup>1</sup> In designing the handling capacity of the future ACCS, C&ED has allowed for an annual increase in workload by 6%.

- (c) the use of advance technology will help C&ED shorten the time required for data processing and retrieval in the risk profiling process from the present six minutes to four minutes;
- (d) the proposal will leverage on the Department's IT infrastructure for the new Customs Headquarters Building scheduled for commissioning in the third quarter of 2010. This will result in lower costs for hardware and software, site preparation as well as support and maintenance services for the ACCS. With the enhanced security and bandwidth of the new IT infrastructure at the new Customs Headquarters Building, the security and efficiency of the ACCS will also be improved; and
- (e) the proposal will ensure proper interfacing with another IT system of C&ED, namely the Road Cargo System (ROCARS)<sup>2</sup>, scheduled for commissioning in early 2010. Upon the completion of the present proposal, C&ED staff will be able to retrieve information from the ACCS and ROCARS at the same workstation, thereby enhancing efficiency in cargo selection.

7. The non-recurrent and recurrent costs of the proposal are set out under the section on Financial Implications in paragraphs 9 to 27 below. In terms of the cost and benefit analysis for a period up to 2015-16, the total costs to be incurred over this period will be partly offset by realisable savings which represent the maintenance cost and support services for the existing system.

Encl. 8. Details of the cost and benefit analysis are set out at the Enclosure.

## **FINANCIAL IMPLICATIONS**

### **Non-recurrent Expenditure**

9. We estimate that the implementation of the proposal will require a total non-recurrent expenditure of \$45,972,000 over a period of two years from 2009-10 to 2010-11, broken down as follows –

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<sup>2</sup> The Finance Committee (FC) approved the creation of a new commitment of \$177,839,000 on 16 November 2007 vide FCR(2007-08)35 for implementing the ROCARS for customs clearance of road cargoes. ROCARS is a system being developed to provide the electronic infrastructure for facilitating customs clearance of road cargoes as well as the movement of transshipment cargoes that involve inter-modal transfer (from land to air and vice versa).

|                                   | <b>2009-10</b> | <b>2010-11</b> | <b>Total</b>  |
|-----------------------------------|----------------|----------------|---------------|
|                                   | <b>\$'000</b>  | <b>\$'000</b>  | <b>\$'000</b> |
| (a) Hardware                      | 6,059          | 13,595         | 19,654        |
| (b) Software                      | 1,796          | 6,334          | 8,130         |
| (c) Implementation services       | 6,541          | 6,083          | 12,624        |
| (d) Site preparation              | 200            | -              | 200           |
| (e) Communication lines           | -              | 450            | 450           |
| (f) Consumables and miscellaneous | 107            | 628            | 735           |
| (g) Contingency                   | 1,470          | 2,709          | 4,179         |
| <b>Total</b>                      | <b>16,173</b>  | <b>29,799</b>  | <b>45,972</b> |

10. On paragraph 9(a) above, the estimate of \$19,654,000 is for the acquisition of computer hardware, including servers and network equipment (such as routers and firewalls).

11. On paragraph 9(b) above, the estimate of \$8,130,000 is for the acquisition of computer software, including operating systems and database management systems.

12. On paragraph 9(c) above, the estimate of \$12,624,000 is for the engagement of contract staff for project implementation. Main implementation activities include system analysis and design, software development, system installation and configuration.

13. On paragraph 9(d) above, the estimate of \$200,000 is for the site preparation works, including installation of network nodes and power points, as well as the associated trunking and cabling works.

14. On paragraph 9(e) above, the estimate of \$450,000 is for the installation of communication lines for system testing and subsequent operation.

15. On paragraph 9(f) above, the estimate of \$735,000 is for the acquisition of start-up consumables and other miscellaneous items such as training of C&ED staff.

16. On paragraph 9(g) above, the estimate of \$4,179,000 represents a 10% contingency on the cost items set out in paragraphs 9(a) to 9(f) above.

17. The above costs are estimated on the basis that all existing usable and compatible hardware and software<sup>3</sup> will continue to be used in the future ACCS.

### Non-recurrent Staff Effort

18. The implementation of the proposal will entail an additional non-recurrent staff cost of \$3,251,000, with breakdown as follows –

|              | <b>2009-10</b> | <b>2010-11</b> | <b>Total</b>  |
|--------------|----------------|----------------|---------------|
|              | <b>\$'000</b>  | <b>\$'000</b>  | <b>\$'000</b> |
| Staff cost   | 1,777          | 1,474          | 3,251         |
| <b>Total</b> | <b>1,777</b>   | <b>1,474</b>   | <b>3,251</b>  |

19. The staff cost estimate above represents a total of 26 man-months of Inspector/Superintendent Grade staff of C&ED and 18 man-months of Analyst/Programmer Grade staff for system analysis and development, procurement and user acceptance tests. C&ED will absorb the requirements from within its existing resources.

### Recurrent Expenditure

20. We estimate that the recurrent expenditure arising from the proposal will be \$12,744,000 per annum from 2011-12 onwards, with breakdown as follows –

|   | <b>2010-11</b> | <b>2011-12 and onwards</b> |
|---|----------------|----------------------------|
|   | <b>\$'000</b>  | <b>\$'000</b>              |
| (a) Hardware maintenance                | 1,078          | 3,718                      |
| (b) Software maintenance                | 698            | 1,856                      |
| (c) On-going system support services    | 1,029          | 4,117                      |
| (d) Rental of communication lines       | 273            | 1,093                      |
| (e) Consumables and miscellaneous items | 305            | 1,220                      |
| <b>Sub-total</b>                        | <b>3,383</b>   | <b>12,004</b>              |
| (f) Staff cost                          | 185            | 740                        |
| <b>Total</b>                            | <b>3,568</b>   | <b>12,744</b>              |

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<sup>3</sup> These hardware and software mainly include some 80 workstations together with their operating systems, some network equipment, and monitoring tools with bundled software in the server room.

21. On paragraph 20(a) above, the estimated annual expenditure of \$3,718,000 is for the acquisition of maintenance services for the computer hardware.

22. On paragraph 20(b) above, the estimated annual expenditure of \$1,856,000 is for the provision of maintenance services and licence fees for the computer software.

23. On paragraph 20(c) above, the estimated annual expenditure of \$4,117,000 is for the hiring of contract staff to provide on-going system support and maintenance services.

24. On paragraph 20(d) above, the estimated annual expenditure of \$1,093,000 is for the rental of data communication lines.

25. On paragraph 20(e) above, the estimated annual expenditure of \$1,220,000 is for the acquisition of consumables (such as backup tapes) and other miscellaneous items.

26. On paragraph 20(f) above, the estimated annual staff cost of \$740,000 represents C&ED's in-house staff effort required for on-going system maintenance and technical support services.

27. Taking into account the realisable savings of \$15,150,000 mentioned in paragraph 7 above, the proposal will bring about net recurrent savings of \$2,406,000 per annum from 2011-12 onwards.

### **Impact on Fees and Charges**

28. This proposal will have no impact on fees and charges. The ACCS enables C&ED to discharge its statutory and international obligations in connection with customs controls. Users are not charged any fee for using the system.

**/IMPLEMENTATION .....**

## IMPLEMENTATION PLAN

29. We plan to implement the proposal according to the following timetable –

| Activity                                    | Target completion date |
|---|------------------------|
| (a) Procurement of hardware and software    | May 2010               |
| (b) System development and site preparation | August 2010            |
| (c) User acceptance test                    | November 2010          |
| (d) Training and system roll-out            | December 2010          |

## PUBLIC CONSULTATION

30. We consulted the Air Cargo Customer Liaison Group which comprises representatives from cargo operators, airlines, express couriers and forwarding companies on the proposal. Noting that it would not entail any change to the business work flow or place additional demands on their IT systems, members of the Liaison Group welcomed the proposal.

31. We consulted the Legislative Council Panel on Commerce and Industry on 17 March 2009. Some Members requested the Administration to set out the anticipated benefits to be brought about by the proposal in quantifiable terms where possible and some enquired whether cargo operators were required to contribute to the development of the proposed system by way of a fee payable to the Government. We have attempted to provide the information vide paragraphs 6 and 28 above. The Panel supported the proposal.

## BACKGROUND

32. On 28 February 1997, the FC approved a commitment of \$127,796,000 for C&ED to develop the ACCS (FCR(96-97)112). Being one of C&ED's mission-critical systems, the ACCS provides –

- (a) electronic links between C&ED and individual cargo operators<sup>4</sup> at HKIA, thereby facilitating the transfer of cargo information and customs clearance instructions, and the tracking of consignment movements among the air cargo operators;

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<sup>4</sup> At present, there are seven cargo operators at the HKIA using the ACCS.

- (b) an electronic link between the ACCS and other internal systems of C&ED, thereby facilitating the retrieval, correlation, analysis and updating of intelligence; and
- (c) automated matching of cargo particulars against the intelligence in other internal systems of C&ED, and the lists of prohibited and restricted items, thereby ensuring that such items are accompanied by relevant licences.

33. Cargo operators provide cargo data to C&ED through the ACCS prior to the arrival of their cargoes at HKIA. C&ED carries out risk profiling based on the information provided. Where C&ED decides to examine a particular consignment, the cargo operator will be informed through the ACCS and asked to lay on the cargoes for examination at designated areas. Other customs clearance instructions are also conveyed to the cargo operators through the ACCS.

34. In February 2009, the FC approved another commitment of \$114,157,000 (FCR(2008-09)68) for C&ED to develop, at the new Customs Headquarters Building, an integrated and centralised IT infrastructure that matches its future operational requirements.

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**Enclosure to FCR(2009-10)16**

**Cost and Benefit Analysis for the Technology Refreshment of  
Air Cargo Clearance System for Customs and Excise Department**

|                               | Cash flow (\$'000) |                |                |                |                |                |                |                |
|-------------------------------|--------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|                               | 2009-10            | 2010-11        | 2011-12        | 2012-13        | 2013-14        | 2014-15        | 2015-16        | Total          |
| <b>Cost</b>                   |                    |                |                |                |                |                |                |                |
| Non-Recurrent                 |                    |                |                |                |                |                |                |                |
| Expenditure                   | 16,173             | 29,799         | -              | -              | -              | -              | -              | 45,972         |
| Staff Cost                    | 1,777              | 1,474          | -              | -              | -              | -              | -              | 3,251          |
| Sub-total                     | 17,950             | 31,273         | -              | -              | -              | -              | -              | 49,223         |
| Recurrent                     |                    |                |                |                |                |                |                |                |
| Expenditure                   | -                  | 3,383          | 12,004         | 12,004         | 12,004         | 12,004         | 12,004         | 63,403         |
| Staff Cost                    | -                  | 185            | 740            | 740            | 740            | 740            | 740            | 3,885          |
| Sub-total                     | -                  | 3,568          | 12,744         | 12,744         | 12,744         | 12,744         | 12,744         | 67,288         |
| <b>Total Cost</b>             | <b>17,950</b>      | <b>34,841</b>  | <b>12,744</b>  | <b>12,744</b>  | <b>12,744</b>  | <b>12,744</b>  | <b>12,744</b>  | <b>116,511</b> |
| <b>Savings</b>                |                    |                |                |                |                |                |                |                |
| Realisable Savings            | -                  | 3,788          | 15,150         | 15,150         | 15,150         | 15,150         | 15,150         | 79,538         |
| <b>Total Savings</b>          | <b>-</b>           | <b>3,788</b>   | <b>15,150</b>  | <b>15,150</b>  | <b>15,150</b>  | <b>15,150</b>  | <b>15,150</b>  | <b>79,538</b>  |
| <b>Net Savings</b>            | <b>-17,950</b>     | <b>-31,053</b> | <b>2,406</b>   | <b>2,406</b>   | <b>2,406</b>   | <b>2,406</b>   | <b>2,406</b>   | <b>-36,973</b> |
| <b>Net Cumulative Savings</b> | <b>-17,950</b>     | <b>-49,003</b> | <b>-46,597</b> | <b>-44,191</b> | <b>-41,785</b> | <b>-39,379</b> | <b>-36,973</b> |                |

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