

**For discussion  
on 4 January 2016**

**LEGISLATIVE COUNCIL PANEL ON FINANCIAL AFFAIRS**

**Replacement of the Procurement and Contract Management System  
and the Unallocated-Store Program  
of the Government Logistics Department**

**PURPOSE**

This paper consults Members on the proposal to replace the existing Procurement and Contract Management System (“PCMS”) and the Unallocated-Store (“U-Store”) Program of the Government Logistics Department (“GLD”).

**BACKGROUND**

**PCMS**

2. One of GLD’s main duties is to act as a procurement agent for major purchases of goods on behalf of bureaux/departments (“B/Ds”). The PCMS is used in GLD mainly for procurement administration and contract management. The PCMS allows users in GLD and other B/Ds to handle procurement activities such as processing and monitoring of tender requests, tender invitations, tender offers, contracts/orders, suppliers enlistment and contractors’ performance, and procurement information analysis. It also provides an electronic tender box for use by suppliers to submit tender offers and applications for inclusion in GLD’s supplier lists.

3. At present, the PCMS serves 9 462 users, including 144 users in GLD, 2 935 users in other B/Ds and 6 383 suppliers. In 2014, 222 purchase requests, 1 128 tender offers and 286 contracts were handled through PCMS. The total value of purchases processed through PCMS in 2014 was \$5 billion.

### **U-Store Program**

4. GLD is also responsible for maintaining, storing and distributing to B/Ds U-Store items which are held in the unallocated stock of GLD. These items include essential and emergency items (such as facial masks and personal protective equipment). The U-Store Program is used in GLD to support operations related to the supply of U-Store items, including the receipt of U-Store items, replenishment of stock, processing of orders raised by B/Ds and issuing of U-Store items.

5. In 2014, there were 129 items and 411 B/D users with 5 763 delivery locations maintained by the U-Store Program. The total number of orders raised by B/Ds and processed through the U-Store Program in 2014 was 6 580.

## **JUSTIFICATIONS**

### **Need to Replace PCMS and U-Store Program**

6. The PCMS and U-Store Program have been in operation since 2009 and 2004 respectively. Same as other computer systems, the expected life span of PCMS is about ten years. It will reach the end of its serviceable life in 2019. Although the U-Store Program was enhanced in 2013 to replace its then obsolete operating system, Windows XP, by Windows 7 to extend its life span, it will also become obsolete by January 2020.

7. In 2014-15, GLD conducted a review on the replacement of the U-Store Program and also engaged a contractor to conduct a feasibility study on the replacement of PCMS. According to these two studies, the existing system components of the PCMS and U-Store Program will be phased out quickly and their spare components will soon become unavailable in the market due to rapid technology development. Maintenance of the systems beyond the expected life span, i.e. after 2019, will be difficult if not impossible. The systems will no longer be able to provide reliable service to B/Ds and the public by then. It is therefore necessary to replace these mission-critical systems in time to avoid any disruption of services.

8. The PCMS now adopts Internet Protocol version 4 (“IPv4”) to facilitate suppliers’ access to the system. As the Internet Protocol addresses provided through IPv4, which have already been in use for some 32 years, are running out, we will replace the PCMS in order to support Internet Protocol Version 6 (“IPv6”) that will be able to provide more Internet Protocol addresses. Otherwise, parties using addresses under IPv6 would not be able to gain access to our website.

9. To cater for new business needs, structural changes have been applied in the past few years to the application software in the existing system through hard-code programs. These programs built in fixed values or parameters in the application software to introduce new business rules that the existing software was not originally designed to handle. As a result, it has now become increasingly difficult to maintain the application software in the existing system and make further changes to it to cater for new business requirements. Further increasing the number of structural changes will also increase the risk of the existing system not working properly.

10. We have considered the option of maintaining the PCMS beyond its expected life span. Although we may be able to continue to support the system by continuous replacement of ageing hardware and system enhancement in order to meet new technology standards, the cost incurred would be very high. Besides, the enhanced system would still be unable to effectively cope with business changes. We therefore

consider replacement of the system to be a more cost-effective option since apart from meeting the new technology standards, it will also enable the introduction of new functions to cope with new business needs and enhance the operational efficiency of GLD. As regards the U-Store Program, although its server and operating system have been upgraded as a stop-gap measure to meet the latest security requirements, the application software is inadequate to support the operation of the U-Store effectively.

### **Functions and Benefits of Proposed System**

11. The feasibility study completed in 2015 found that it was practicable and more cost-effective to incorporate the replacement of the U-Store Program into the PCMS replacement project as one integrated project through shared use of hardware and data centre services. Working on this basis, the Director of Government Logistics, in consultation with the Government Chief Information Officer and with the support of the Secretary for Financial Services and the Treasury, proposes to replace the existing PCMS and U-Store Program at an estimated cost of \$72,659,000.

12. In addition to performing the full range of functions of the existing PCMS and U-Store Program, the proposed replacement systems will be equipped with the following new/enhanced functions to enable GLD to continue to support its operation and provide reliable services to B/Ds, and achieve various benefits –

- (a) a new workflow engine to ensure greater flexibility and shorter lead time for configuring business rules and adapting to future business changes (e.g. introduction of new type of purchases for use by B/Ds, if required, or revision of the schedule of authorities);
- (b) a new Collaborative Workspace to centralise the repository of tender documents (i.e. to store tender documents centrally in the replacement system instead of individual personal

computers) and enable collaborative use of the tender documents by various users in GLD and B/Ds;

- (c) improved functions relating to screen flow, user interface, error message, bring-up and alert, response time, and report generation, and enhancement features such as interaction with users, automatic copying, and provision of pre-defined list with options to replace manual data input. They will enhance efficiency, achieve better monitoring and control on business, and enable prompt decision-making;
- (d) enhanced scope of interface to enable more effective exchange of data with other systems by –
  - (i) developing a new interface with the Printing Services Management System (“PSMS”)<sup>1</sup> in GLD for sharing of updated supplier information; and
  - (ii) expanding the data coverage of established interface with other B/Ds, i.e. collect from the Government Financial Management Information System (“GFMIS”)<sup>2</sup> of the Treasury additional data on the orders issued under GLD bulk contracts, and change the interface with the e-Procurement System of the Office of the Government Chief Information Officer from one-way to two-way to facilitate the exchange of updates on suppliers’ particulars;
- (e) automatic delivery of soft copies of reports to users instead of printing out hard copies for distribution, which will reduce the use of paper; and

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<sup>1</sup> PSMS supports the operations of the Printing Division of GLD. It provides functions to enable preparation of printing job estimates and specifications, order processing and enquiries, scheduling, production control, job tracking and reporting, outsourcing and contract management, inventory control, costing analysis, and invoicing, etc.

<sup>2</sup> GFMIS supports the operations of B/Ds in respect of financial management. It provides functions to enable recording and reporting of approved funds, commitments, cash receipts, and payments, etc.

- (f) new/enhanced functions relating to U-Store operations for updating and approving orders, grouping orders and bulk picking items, and consolidating orders to facilitate the distribution of U-Store items by transportation teams. They will help speed up processing time, improve tracking of delivery status, improve efficiency of retrieving management information, enable better sharing of information on U-Store items and enhance customer satisfaction.

## **FINANCIAL IMPLICATIONS**

### **Capital Expenditure**

13. It is estimated that the implementation of the replacement system will require a total capital expenditure of \$72,659,000 over a period of five years from 2016-17 to 2020-21. The cost-breakdown is at **Annex A**.

### **Other Non-recurrent Expenditure**

14. The project also entails non-recurrent staff costs of \$23,844,000 from 2016-17 to 2019-20 for managing the project. The costs will be absorbed by GLD through internal redeployment.

### **Recurrent Expenditure**

15. It is estimated that the proposal will entail an indicative annual recurrent expenditure of \$2,473,000 in 2019-20, increasing to \$11,987,000 from 2020-21 onwards. This expenditure covers the costs of hardware maintenance, software licence fees, communication network rental, system maintenance, consumables and cost of hosting in data centres, and cost amounting to \$3,934,000 per annum for staff who are currently deployed to support the existing PCMS and will be re-deployed to provide support of the proposed replacement systems. The recurrent expenditure will be absorbed by GLD with its existing resources. A detailed breakdown is at **Annex B**.

## Cost Avoidance

16. If the proposed system could **not** be approved and the Government had to sustain the existing business operation, the existing systems would need to be maintained, which would involve a recurrent cost of \$7,174,000 per annum for system maintenance, communication network rental fees and hosting in data centre and a further \$3,934,000 for staff cost. In addition, a non-recurrent cost of \$303,000 would be required for upgrading the soon-to-be outdated server software installed in the existing system. Furthermore, an efficiency gain at an estimated notional staff cost of \$552,000 per annum that could be made through the new system would also not be achieved.

## IMPLEMENTATION PLAN

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

<u>Activity</u>	<u>Target completion date</u>
Tendering and award of contract (assuming Finance Committee's approval can be secured by Q2 2016)	June 2017
System analysis and design	May 2018
System development	
- all system functions except Collaborative Workspace	January 2019
- Collaborative Workspace	October 2019
System acceptance test, training and system roll-out	
- all system functions except Collaborative Workspace	June 2019
- Collaborative Workspace	December 2019

## **ADVICE SOUGHT**

18. Subject to Members' views, we plan to seek funding approval from the Finance Committee in the first half of 2016.

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**Financial Services and the Treasury Bureau  
December 2015**



## Annex A

### Capital Expenditure Required for the Proposed Replacement of PCMS and U-Store Program

	2016-17 \$'000	2017-18 \$'000	2018-19 \$'000	2019-20 \$'000	2020-21 \$'000	Total \$'000
(a) Hardware			615	6,734		7,349
(b) Software			253	12,046		12,299
(c) Communication network		3	36	21		60
(d) Implementation services		7,080	2,135	20,108	1,406	30,729
(e) Contract staff	553	2,663	3,977	2,991		10,184
(f) Site preparation			70			70
(g) Consumables		20	211			231
(h) External testing team			254	3,157		3,411
(i) Data centre services		240	1,143	338		1,721
Sub-total	553	10,006	8,694	45,395	1,406	66,054
(j) Contingency						<u>6,605</u>
					<b>Total:</b>	<b>72,659</b>

## Annex B

### Recurrent Expenditure Required for the Proposed Replacement of PCMS and U-Store Program

	2019-20	2020-21 and onwards
	\$'000	\$'000
(a) Hardware maintenance	23	892
(b) Software licence/subscription	8	1,236
(c) Communication network	62	83
(d) System maintenance	1,322	4,446
(e) Consumables	45	45
(f) Data centre services	1,013	1,351
(g) Staff cost		3,934
<b>Total:</b>	<b>2,473</b>	<b>11,987</b>