

## **ITEM FOR FINANCE COMMITTEE**

### **CAPITAL WORKS RESERVE FUND**

#### **HEAD 710 - COMPUTERISATION**

##### **Transport Department**

##### **New Subhead “Replacement of the Vehicles and Drivers Licensing Integrated Data (VALID) III System”**

#### **HEAD 186 - TRANSPORT DEPARTMENT**

##### **Subhead 000 Operational expenses**

Members are invited to approve –

- (a) a new commitment of \$110 million under Head 710 for replacement of the Vehicles and Drivers Licensing Integrated Data (VALID) III System; and
- (b) an increase in the ceiling placed on the total notional annual mid-point salary value of all non-directorate posts in the permanent establishment of the Transport Department in 2001-02 from \$424,152,000 by \$1,970,520 to \$426,122,520 for creating two non-directorate posts for the implementation of the proposed project.

### **PROBLEM**

2. The existing Vehicles and Drivers Licensing Integrated Data (VALID) III System is unable to meet the changing requirements and new functionalities. We need to replace the existing system with a more advanced system which can fully meet the operational needs of the Transport Department (TD) and other user departments.

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## PROPOSAL

3. The Commissioner for Transport (C for T), on the advice of the Director of Information Technology Services (DITS) and with the support of the Secretary for Transport, proposes to replace the VALID III System with a new VALID IV system to improve operational efficiency and customer service.

## JUSTIFICATION

### Current Environment and Problems

4. The VALID III System is the third generation of the original system first introduced in 1976, and provides a computer based information system for the registration and licensing of vehicles and drivers. The system was last upgraded in 1991. It supports the operational requirements of nine government departments, i.e. TD, Judiciary, Customs and Excise Department (C&ED), Environmental Protection Department (EPD), Housing Department (HD), Hong Kong Police Force (HKPF), Independent Commission Against Corruption (ICAC), Inland Revenue Department (IRD) and Treasury, under eight application subsystems<sup>1</sup>.

5. The objectives of the VALID System are to –

- (a) maintain service in the licensing and registration of vehicles and drivers and in law enforcement of fixed penalty moving and parking schemes;
- (b) maintain sharable data environment for vehicles, drivers and other transport/traffic information and environmental issues on transport;
- (c) provide technology framework for future enhancement and data sharing capabilities; and
- (d) allow flexibility in implementing changes to legislation.

6. Operational efficiency is compromised due to the following limitations to the existing VALID III System -

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<sup>1</sup> The eight application subsystems are the Fixed Penalty Parking subsystem, the Fixed Penalty Moving subsystem, the Non-fixed Penalty subsystem, the Driving Offence Point subsystem, the Driver subsystem, the Vehicle subsystem, the Target Tracking subsystem and the Driving Test Appointment subsystem.

- (a) the system is aging and was designed to meet requirements set about ten years ago. The software is out-dated and the terminal equipment is obsolete. It has become increasingly difficult and costly to maintain as the maintenance contractor is unable to guarantee replacement of some of the obsolete terminal spare parts, nor can it guarantee service level;
- (b) the system can only support input of Chinese name of holders of driving licence using Chinese Character Code. Input of all other information has to be conducted in English. In the event the address is provided in Chinese, counter staff have to do the English translation which hampers efficiency and accuracy of data input. The input of wrong address leads to non-delivery of reminders for outstanding fixed penalty ticket fines and court summonses for outstanding fixed penalty tickets and other traffic offences. A proposal to enhance the system to enable the existing system to process Chinese input/output at a cost of over \$9 million was considered and eventually called off because of the high cost and in view of the need for a total replacement of the system in the near future;
- (c) the system does not support real time data exchange between various systems. This causes problem when fixed penalty ticket fines have been paid at court but licences cannot be issued because the information has not been updated on the licensing computer system promptly;
- (d) the system cannot fully support seven days a week and round the clock licensing transactions as suggested by the Electronic Service Delivery Scheme. Applications received in certain hours of the day have to be processed by batch mode. The system has to be upgraded to allow more efficient service delivery through the open system round the clock; and
- (e) the system is inflexible and cannot accommodate rapid and easy changes to computer program and application. Even a minor enhancement could take six months to introduce and at a cost exceeding \$1 million. A recent example is the introduction of probationary driving licence for motorcycle in which alteration to the programme took more than six months.

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### **The Proposed System**

7. We propose to replace the computer system with a new system with the following characteristics –

- (a) open architecture – separating software applications from a scalable database that can be easily expanded. This will enable the system to adapt to new requirements over time;
- (b) open system – web-based open standard computer system enabling shared use among government departments and possible private sector participation in delivering licensing services in future; and
- (c) flexibility – enabling new applications to be developed in good time and at reasonable costs.

### **Anticipated Benefits**

8. The new VALID System will bring immediate benefits in terms of improved services to the public and greater efficiency of the relevant departments, which include –

- (a) full Chinese data processing capability which is essential for accurate, quick and direct data entry, particularly for addresses;
- (b) on-line interface with systems installed in Treasury and Judiciary for immediate transfer of information required for real time processing of licensing transactions;
- (c) flexible deployment and development of applications facilitating electronic delivery of government services with possible private sector participation;
- (d) prompt compilation of management information/statistics required for policy analysis and evaluation;
- (e) seven days a week and round the clock services for electronic transactions; and
- (f) implementation of the enhancement requirements of TD and other user departments in a prompt manner thereby improving overall level of service provided to the public.

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### Cost-benefit Analysis

9. Major annual savings after the installation of the VALID IV system will come from the anticipated reduction of staff in the Licensing Section of the department. We estimate that a total of 32 posts (three Clerical Officers, 19 Assistant Clerical Officers and ten Clerical Assistants) dealing with licensing process can be deleted after the implementation of the proposed system. This amounts to a realisable annual saving of \$10,120,000 from 2005-06. There will also be an annual saving of \$1,600,000 arising from deletion of the dataline cost and hardware and software maintenance cost of the existing system. Furthermore, the proposed system will bring about notional annual savings of \$8,110,000 through the exclusion of the apportioned cost from the ITSD Central Computer Centre for maintaining the existing system. Also, the proposed system will achieve an annual cost avoidance amounting to \$6,260,000 due to elimination of the need for application enhancement and Chinese processing maintenance which would otherwise be required to cope with the enhancement of the existing system. Apart from the above tangible benefits, as explained in paragraph 8 above, the proposal will bring intangible benefits in the form of better services to the public and greater efficiency of the relevant departments. Furthermore, the proposed system will provide a standard-based and scalable platform so that future improvement initiatives including private sector participation and new demand in licensing services can be implemented in a timely and cost-effective manner.

10. The annual savings will amount to \$26,090,000 from 2005-06 onwards, made up as follows –

	<b>\$'000</b>
<b>Realisable savings</b>	
(a) Reduction in manpower in Licensing Division	10,120
(b) Dataline cost of VALID III	840
(c) Hardware and software maintenance of VALID III	760
Sub-total	11,720
<b>Notional savings</b>	
(d) Apportioned cost of ITSD Central Computer Centre	8,110
<b>Cost avoidance</b>	
(e) Application enhancement of VALID III	6,000
(f) Chinese processing maintenance of VALID III	260
Sub-total	6,260
<b>Total</b>	<b>26,090</b>

11. In addition to the annual savings, there will be an one-off cost avoidance totalling \$16,300,000, which will otherwise be required to replace the obsolete equipment of the existing VALID III system (\$7,000,000) and to enhance the function of Chinese processing (\$9,300,000). A detailed cost-benefit analysis for the project is at Enclosure .

## FINANCIAL IMPLICATIONS

### Non-recurrent Expenditure

12. The estimated non-recurrent cost of the proposed system is \$134,000,000. This comprises \$110,000,000 for the purchase of computer hardware and software, site preparation, application development, implementation services, data conversion, etc, and \$24,000,000 for the in-house development staff cost of TD for project delivery. A detailed breakdown of the cost estimates is as follows –

<b>Non-recurrent Expenditure</b>	<b>2001-02 \$'000</b>	<b>2002-03 \$'000</b>	<b>2003-04 \$'000</b>	<b>2004-05 \$'000</b>	<b>Total \$'000</b>
(a) Hardware & data communication	375	8,125	8,500	1,000	18,000
(b) Software	200	3,800	4,000	---	8,000
(c) Site preparation	---	4,000	4,000	---	8,000
(d) Application development	438	13,562	10,500	10,500	35,000
(e) Implementation services	495	7,425	5,940	5,940	19,800
(f) Data conversion	---	2,550	4,250	1,700	8,500
(g) Miscellaneous	275	1,074	1,064	287	2,700
(h) Contingency (10%)	178	4,054	3,825	1,943	10,000
<b>Sub-total</b>	<b>1,961</b>	<b>44,590</b>	<b>42,079</b>	<b>21,370</b>	<b>110,000</b>
(i) Staff costs in TD	6,500	8,700	7,000	1,800	24,000
<b>Total</b>	<b>8,461</b>	<b>53,290</b>	<b>49,079</b>	<b>23,170</b>	<b>134,000</b>

13. As regards paragraph 12(a) above, the expenditure of \$18,000,000 is for the acquisition of various servers, workstations, high-speed printers, communication and network equipment, etc.

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14. As regards paragraph 12(b) above, the expenditure of \$8,000,000 is for the acquisition of operation system software, application server software, web server software, database management system, network management and monitoring software, application development tools and personal computer software, etc.

15. As regards paragraph 12(c) above, the expenditure of \$8,000,000 is for the site preparation work such as cabling work, installation of conduits, power sockets and air-conditioning for the user departments' offices and the computer suites of TD.

16. As regards paragraph 12(d) above, the expenditure of \$35,000,000 is for the hiring of services for application development and project monitoring.

17. As regards paragraph 12(e) above, the expenditure of \$19,800,000 is for the provision of business process re-engineering and legal consultancy service; acquisition of technical consultants to provide professional advice on system infrastructure, security issues and risk assessment; and support services for system implementation.

18. As regards paragraph 12(f) above, the expenditure of \$8,500,000 is for hiring of service for the design and implementation of data conversion to cope with the architecture and design of new system.

19. As regards paragraph 12(g) above, the expenditure of \$2,700,000 is for purchase of consumables for system startup and staff training for system development and operation.

20. As regards paragraph 12(h) above, the expenditure of \$10,000,000 represents 10% contingency on the cost items set out in paragraph 12(a) to (g).

21. As regards paragraph 12(i) above, the expenditure of \$24,000,000 represents the TD staff cost for the project. On this amount, a total of \$9,300,000 is for 6 man-months of Assistant Commissioner for Transport, 36 man-months of Principal Executive Officer and 24 man-months of Senior Executive Officer, and will be met by internal redeployment within TD. The remaining staff cost of \$14,700,000 will be used for acquiring additional nine posts. A detailed breakdown of these posts is as follows –

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- (a) 39 man-months of Senior Systems Manager for overseeing the planning and implementation of the VALID IV System;
- (b) 24 man-months of Chief Transport Officer to study how best to produce timely management information/statistics for policy analysis and evaluation, and to consider in detail the business opportunities and develop possible schemes for private sector participation in licensing service delivery made feasible under the new VALID IV System;
- (c) 12 man-months of Executive Officer I and 24 man-months of Executive Officer II for user co-ordination, system testing and general support of the project; and
- (d) 24 man-months of Senior Computer Operator, 48 man-months of Computer Operator I and 48 man-months of Computer Operator II for operating the computer suites during the development period.

To enable the creation of one Senior Systems Manager and one Chief Transport Officer in 2001-02, it is necessary to increase the ceiling of notional annual mid-point salary (NAMS) value of TD from \$424,152,000 by \$1,970,520 to \$426,122,520. The remaining seven posts will be required after 2001-02.

22. The staff efforts of other relevant departments, namely Judiciary, C&ED, EPD, HD, HKPF, ICAC, IRD and Treasury are minimal and will be absorbed within their existing resources.

### Recurrent Expenditure

23. The estimated annual recurrent cost is \$9,500,000 for the first year and \$18,800,000 thereafter. Details are as follows –

<b>Recurrent Expenditure</b>	<b>2004-05</b>	<b>2005-06</b>
	\$'000	onwards \$'000
(a) Hardware & data communication	1,750	3,500
(b) Software	600	1,200
(c) Application maintenance	2,200	4,400
(d) Miscellaneous	450	900
<b>Sub-total</b>	<b>5,000</b>	<b>10,000</b>
Staff Costs		
(e) TD	2,800	5,500
(f) ITSD	1,700	3,300
<b>Sub-total</b>	<b>4,500</b>	<b>8,800</b>
<b>Total</b>	<b>9,500</b>	<b>18,800</b>

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24. As regards paragraph 23(a) above, the expenditure of \$3,500,000 is for the maintenance of system hardware and rental of dataline.

25. As regards paragraph 23(b) above, the expenditure of \$1,200,000 is for the licence fee of system software.

26. As regards paragraph 23(c) above, the expenditure of \$4,400,000 is for the hire of services to provide on-going software maintenance and minor enhancement of application systems.

27. As regards paragraph 23(d) above, the expenditure of \$900,000 is for on-going staff training, purchase of consumables and miscellaneous expenses.

28. As regards paragraph 23(e) above, the expenditure of \$5,500,000 is for one Senior Computer Operator, five Computer Operator I and ten Computer Operator II for operation of the computer suites and system administration in two data centres and providing helpdesk service. The operational requirements will be met by acquiring additional 16 posts, the cost of which can be offset by the recurrent realisable savings from efficiency gains (i.e. \$10,120,000) in the Licensing Division of TD.

29. As regards paragraph 23(f) above, the expenditure of \$3,300,000 represents the ITSD staff costs for on-going system operation and support of the system. The staff requirement will be met by internal redeployment within ITSD.

30. The staff efforts of other relevant departments, namely Judiciary, C&ED, EPD, HD, HKPF, ICAC, IRD and Treasury are minimal and will be absorbed within their existing resources.

### **Implications on Licence Fees**

31. As the annual amortized cost of the proposed system represents only a very small proportion of the annual revenue from licence fees, this proposal will have no impact on vehicle or driving licensing fees.

### **Implementation Plan**

32. We estimate that the project will be completed by end 2004. The proposed implementation plan is as follows –

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<b>Activity</b>	<b>Expected completion date</b>
(a) Tendering for system implementation	mid 2002
(b) Procurement and site preparation	mid 2004
(c) System implementation	end 2004

### **BACKGROUND INFORMATION**

33. In line with Government's policy to take full advantage of development of information technology in order to improve the efficiency, quality of service and cost-effectiveness of government departments, the Efficiency Unit completed a feasibility study on Replacement and Enhancement of the VALID III in late 2000. The study concluded that the current VALID III System was inadequate in supporting the operational needs of TD and other user departments and recommended a total replacement of the system.

34. The Legislative Council Panel on Transport noted on 25 May 2001 the Administration's proposal to replace the system. Members did not raise any objection to the proposal.

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Transport Department  
June 2001

**Enclosure to FCR(2001-02)21**

**Cost-Benefit Analysis of the Proposed VALID IV System  
(at 2000 - 2001 Price Level)**

	2001 - 02	2002 - 03	2003 - 04	2004 - 05	2005 - 06	2006 - 07	2007 - 08	2008 - 09	2009 - 10	Total
	(\$'000)	(\$'000)	(\$'000)	(\$'000)	(\$'000)	(\$'000)	(\$'000)	(\$'000)	(\$'000)	(\$'000)
<b>Costs</b>										
<u>Non-recurrent</u>										
- expenditure	1,961	44,590	42,079	21,370	-	-	-	-	-	110,000
- staff cost	6,500	8,700	7,000	1,800	-	-	-	-	-	24,000
<b>sub-total</b>	<b>8,461</b>	<b>53,290</b>	<b>49,079</b>	<b>23,170</b>	-	-	-	-	-	<b>134,000</b>
<u>Recurrent</u>										
- expenditure	-	-	-	5,000	10,000	10,000	10,000	10,000	10,000	55,000
- staff cost	-	-	-	4,500	8,800	8,800	8,800	8,800	8,800	48,500
<b>sub-total</b>	-	-	-	<b>9,500</b>	<b>18,800</b>	<b>18,800</b>	<b>18,800</b>	<b>18,800</b>	<b>18,800</b>	<b>103,500</b>
<b>Total costs</b>	<b>8,461</b>	<b>53,290</b>	<b>49,079</b>	<b>32,670</b>	<b>18,800</b>	<b>18,800</b>	<b>18,800</b>	<b>18,800</b>	<b>18,800</b>	<b>237,500</b>
<b>Benefits</b>										
<u>One-off</u>										
- cost avoidance		-	-	16,300	-	-	-	-	-	16,300
<b>sub-total</b>		-	-	<b>16,300</b>	-	-	-	-	-	<b>16,300</b>
<u>Annual</u>										
- realizable saving	-	-	-	5,860	11,720	11,720	11,720	11,720	11,720	64,460
- notional saving	-	-	-	4,055	8,110	8,110	8,110	8,110	8,110	44,605
- cost avoidance	-	-	-	3,130	6,260	6,260	6,260	6,260	6,260	34,430
<b>sub-total</b>	-	-	-	<b>13,045</b>	<b>26,090</b>	<b>26,090</b>	<b>26,090</b>	<b>26,090</b>	<b>26,090</b>	<b>143,495</b>
<b>Total benefits</b>	-	-	-	<b>29,345</b>	<b>26,090</b>	<b>26,090</b>	<b>26,090</b>	<b>26,090</b>	<b>26,090</b>	<b>159,795</b>
<b>Net benefits</b>	<b>(8,461)</b>	<b>(53,290)</b>	<b>(49,079)</b>	<b>(3,325)</b>	<b>7,290</b>	<b>7,290</b>	<b>7,290</b>	<b>7,290</b>	<b>7,290</b>	<b>(77,705)</b>
<b>Cumulative benefits</b>	<b>(8,461)</b>	<b>(61,751)</b>	<b>(110,830)</b>	<b>(114,155)</b>	<b>(106,865)</b>	<b>(99,575)</b>	<b>(92,285)</b>	<b>(84,995)</b>	<b>(77,705)</b>	