

Legislative Council Panel on Transport

Replacement of Transport Department's Vehicles and Drivers Licensing Integrated Data (VALID) Computer System

PURPOSE

At the Panel meeting held on 16 March 2001, Members noted the Administration's suggestion to include in the agenda for the April 2001 meeting an item on "Replacement of the Transport Department's Licensing Computer System". In view of the heavy agenda for that meeting, Members asked to be briefed on the subject by means of an information paper. This paper outlines the Administration's proposal to replace the Vehicles and Drivers Licensing Integrated Data (VALID) Computer System of Transport Department (TD) with a more advanced system which can fully meet the operational needs of TD and other user departments.

BACKGROUND

2. The existing VALID III System is the third generation of the original system first introduced in 1976, and is deployed to provide 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 under eight application subsystems.

3. With the aging of the system and rapid changes in user requirements, the existing VALID III System is unable to meet the changing requirements and new functionalities. There are also problems with the efficiency and effectiveness of implementing changes and new applications under the existing VALID III System.

4. In line with Government's policy to take full advantage 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.

PROPOSAL

5. On the advice of the Director of Information Technology Services (DITS), we propose to replace the existing VALID III System with a new VALID IV system to provide an efficient and effective means to improve operational efficiency and customer service. To provide the necessary staff in developing the new system and for considering the business opportunities for private sector participation in licensing services delivery, we propose to increase the notional annual mid-point salary (NAMS) ceiling of TD in 2001/02 from \$424,152,000 by \$1,970,520 to \$426,122,520.

JUSTIFICATION

Current Environment and Problems

6. There are limitations to the existing VALID III system, which are affecting operational efficiency:

- (a) the system is aging and was designed to meet requirements set 10 years ago. The software is out-dated and the terminal equipment is obsolete. It has become increasingly difficult and costly to maintain - the maintenance contractor is unable to provide guaranteed replacement for some of the obsolete terminal spare parts, neither can it provide a guarantee on service level;
- (b) the system is not fully bilingual in that it can only support input of the Chinese name of driving licence holders. A project to

enhance the system to enable it to process Chinese Input/Output at a cost of over \$9 million had been proposed but was eventually called off because of the high cost and in view of the need for a total replacement of the system in the foreseeable future;

- (c) it does not support real time data exchange between various systems. This has led to the problem where 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 7 (days) x 24 (hours) licensing transactions as required under the Electronic Service Delivery Scheme to process all applications in real time, and applications received in some hours 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 relatively inflexible and cannot support rapid and easy changes to computer programme and application : even a minor enhancement could take six months to introduce and at a cost of over \$1 million. A recent example is the introduction of probationary driving licence for motorcycle. Alterations to the programme took more than six months.

The Proposed System

7. We propose to replace the current computer system with a new one 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 cost.

Anticipated Benefits

8. The new VALID System will bring significant intangible benefits in terms of service improvement 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 to systems in the Treasury and Judiciary for immediate transfer of information required for processing of licensing transactions;
- (c) flexible deployment and development of applications facilitating e-Government initiatives including private sector participation;
- (d) prompt compilation of management information/statistics required for policy analysis and evaluation;
- (e) 7 x 24 extended services for electronic transactions; and
- (f) implementation of enhancement requirements of TD and other user Departments in a prompt manner thereby improving overall service delivery to the public.

Cost Savings

9. It is estimated that implementation of the proposed system will result in savings of \$29,345,000 in 2004-05, followed by an annual saving of \$26,090,000 from 2005-06 onwards, made up as follows :

		Amount (HK\$'000)	
(a) Non-recurrent Realisable Saving		NIL	
(b) Non-recurrent Notional Saving		NIL	
(c) Non-recurrent Cost Avoidance			
	Replacement of VALID III equipment	7,000	
	Chinese processing enhancement	9,300	
	Total :	16,300	
(d) Recurrent Realisable Saving			
	No. of Post	Annual Staff Cost (HK\$)	Total Cost (HK\$'000)
<i>Reduction of Manpower by efficiency gain in Licensing Division of TD</i>			
	3	466,956	1,400
	19	336,204	6,400
	10	232,272	2,320
	Sub-total		10,120
<i>Others</i>			
			840
			760
	Sub-total		1,600
		Total:	11,720
(e) Recurrent Notional Saving			
	Apportioned Cost of ITSD Central Computer Centre		8,110
	Total:		8,110
(f) Recurrent Cost Avoidance			
	Application Enhancement in VALID III		6,000
	Chinese processing Maintenance of VALID III		260
	Total:		6,260

(g) Summary of Savings

Non-recurrent Saving

Realisable Saving	0
Notional Saving	0
Cost Avoidance	16,300
Total:	16,300

Recurrent Saving

Realisable Saving	11,720
Notional Saving	8,110
Cost Avoidance	6,260
Total:	26,090

10. The cost and benefit for the project over the next 10-year period are summarised at **Annex**.

FINANCIAL IMPLICATIONS

Non-recurrent Expenditure

11. The estimated non-recurrent cost of the proposed system is \$136,600,000. This comprises \$110,000,000 for the purchase of computer hardware and software, site preparation, application development, implementation services, data conversion, etc., and \$26,600,000 for the in-house development staff cost of TD and the Hong Kong Police Force (HKPF). The detailed breakdown is as follows:-

Non-recurrent Expenditure	01-02 (HK\$'000)	02-03 (HK\$'000)	03-04 (HK\$'000)	04-05 (HK\$'000)	Total (HK\$'000)
(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

Sub-total	1,961	44,590	42,079	21,370	110,000
Staff Costs					
(i) TD	6,500	8,700	7,000	2,300	24,500
(j) HKPF	300	600	800	400	2,100
Sub-total	6,800	9,300	7,800	2,700	26,600
Total Cost	8,761	53,890	49,879	24,070	136,600

12. As regards paragraph 11(a) above, the expenditure of \$18,000,000 is for the acquisition of various servers, workstations, high-speed printers, communication and network equipment, etc.

13. As regards paragraph 11(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 Computers software, etc.

14. As regards paragraph 11(c) above, the expenditure of \$8,000,000 is for site preparation works such as cabling work, installation of conduits, power sockets and air-conditioning for the user department offices and the computer suites of TD.

15. As regards paragraph 11(d) above, the expenditure of \$35,000,000 is for the hiring of services for application development, user coordination and project monitoring.

16. As regards paragraph 11(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.

17. As regards paragraph 11(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.

18. As regards paragraph 11(g) above, the expenditure of \$2,700,000 is

for purchase of consumables for system startup and staff training for system development and operation.

19. As regards paragraph 11(h) above, the expenditure of \$10,000,000 represents 10% contingency in respect of items at 11(a) to 11(g).

20. As regards paragraph 11(i) above, the expenditure of \$24,500,000 represents the TD staff cost for the project. Out of this amount, a total of \$9,300,000 is for 6 man-months of Assistant Commissioner, 36 man-months of Principal Executive Officer and 24 man-months of Senior Executive Officer, and will be met by internal redeployment. The remaining total of \$15,200,000 will be used for acquiring additional posts, of which two will be created in 2001/02. The detailed breakdown of the additional posts is as follows:

- (a) 42 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 of information/statistics for policy analysis and evaluation, and to consider in detail the business opportunities and to develop possible schemes for private sector participation in licensing service delivery made possible 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.

21. As regards paragraph 11(j) above, the expenditure of \$2,100,000 represents the HKPF staff costs for 2 man-months of Chief Inspector of Police, 11 man-months of Senior Inspector of Police, 6 man-months of Sergeant, 8

man-months of Police Constable and 6 man-months of Assistant Clerical Officer for project management, user co-ordination, system testing and general support of the project. The staff requirement will be met by internal redeployment within HKPF.

22. The staff effort of other relevant departments namely Housing Department (HD), Customs and Excise Department (C&ED), Independent Commission Against Corruption (ICAC), Environmental Protection Department (EPD), Inland Revenue Department (IRD), Treasury and Judiciary is minimal and will be absorbed by the respective departments.

Recurrent Expenditure

23. The estimated annual recurrent cost is \$10,100,000 for the first year and \$19,900,000 for the second year onwards. The detailed breakdown is as follows:-

Recurrent Expenditure	01-02 (HK\$'000)	02-03 (HK\$'000)	03-04 (HK\$'000)	04-05 (HK\$'000)	05-06 onwards (HK\$'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
Sub-total	---	---	---	5,000	10,000
Staff Costs					
(e) TD	---	---	---	2,800	5,500
(f) HKPF	---	---	---	600	1,100
(g) ITSD	---	---	---	1,700	3,300
Sub-total				5,100	9,900
Total				10,100	19,900

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 hire of services to provide on-going 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 1 Senior Computer Operator, 5 Computer Operator I and 10 Computer Operator II for operation of the computer suites and system administration in two data centres and providing helpdesk services. The operational requirements will be met by acquiring additional posts, the cost of which can be off-set by the recurrent realisable savings from efficiency gains in the Licensing Division of TD.

29. As regards paragraph 23(f) above, the expenditure of \$1,100,000 represents the HKPF staff costs for on-going system operation and support of the system. The staff requirement will be met by internal redeployment within HKPF.

30. As regards paragraph 23(g) 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.

31. The staff effort of other relevant departments namely HD, C&ED, ICAC, EPD, IRD, Treasury and Judiciary is minimal and will be absorbed.

Implications on Licence Fees

32. 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

33. We estimate that the project will be completed by end 2004. The

proposed implementation plan is as follows :

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

THE WAY FORWARD

34. We will seek the approval of the Finance Committee on 22 June 2001 on funding for replacement of the above computer systems.

ADVICE SOUGHT

35. Members are invited to provide comments on the replacement project.

Transport Bureau
May 2001

Cost-Benefit Analysis of the proposed VALID IV system

(at 2000-2001 price level)

	01 - 02	02 - 03	03 - 04	04 - 05	05 - 06	06 - 07	07 - 08	08 - 09	09 - 10
	(\$'000)	(\$'000)	(\$'000)	(\$'000)	(\$'000)	(\$'000)	(\$'000)	(\$'000)	(\$'000)
Costs									
Non-recurrent									
- expenditure	1,961	44,590	42,079	21,370	-	-	-	-	-
- staff cost	6,800	9,300	7,800	2,700	-	-	-	-	-
Sub-total	8,761	53,890	49,879	24,070	-	-	-	-	-
Recurrent									
- expenditure	-	-	-	5,000	10,000	10,000	10,000	10,000	10,000
- staff cost	-	-	-	5,100	9,900	9,900	9,900	9,900	9,900
Sub-total	-	-	-	10,100	19,900	19,900	19,900	19,900	19,900
Total costs	8,761	53,890	49,879	34,170	19,900	19,900	19,900	19,900	19,900
Benefits									
One-off									
- cost avoidance		-	-	16,300	-	-	-	-	-
Sub-total		-	-	16,300	-	-	-	-	-
Annual									
- realisable saving	-	-	-	5,860	11,720	11,720	11,720	11,720	11,720
- notional saving	-	-	-	4,055	8,110	8,110	8,110	8,110	8,110
- cost avoidance	-	-	-	3,130	6,260	6,260	6,260	6,260	6,260
Sub-total	-	-	-	13,045	26,090	26,090	26,090	26,090	26,090
Total benefits	-	-	-	29,345	26,090	26,090	26,090	26,090	26,090
Net benefits	(8,761)	(53,890)	(49,879)	(4,825)	6,190	6,190	6,190	6,190	6,190