

ITEM FOR FINANCE COMMITTEE

CAPITAL WORKS RESERVE FUND

HEAD 710 – COMPUTERISATION

Transport Department

New Subhead “The Vehicles and Drivers Licensing Integrated Data System Infrastructure Enhancement Project”

Members are invited to approve a new commitment of \$71,284,000 for enhancing the infrastructure of the Vehicles and Drivers Licensing Integrated Data System IV of the Transport Department.

PROBLEM

The Transport Department (TD) needs to enhance the existing Vehicles and Drivers Licensing Integrated Data System IV (the VALID IV System) in order to meet the operational needs and improve the performance of the system.

PROPOSAL

2. The Commissioner for Transport, with the support of the Secretary for Transport and Housing and the Government Chief Information Officer, proposes to create a new commitment of \$71,284,000 for extending the service life of the VALID IV System and enhancing its performance.

JUSTIFICATION

3. The VALID IV System is an integrated computerised information system to support vehicle and driving licensing services. The number of licensing

/transactions

transactions in 2013 amounted to 2 988 000 (i.e. about 12 000 transactions per working day). Any suspension of service due to the breakdown of the System will adversely affect the public.

4. The existing maintenance contract of the VALID IV System will expire in September 2017. The hardware and software of the System have also become outdated gradually. In particular, some of the system software (such as operating systems, application and web server software) and the database software that the VALID IV System is using have already reached the end of their service life and service support for security patches is no longer available. This has somehow limited its ability to keep up with the increasing demand for existing services and cope with future demands. TD therefore considers it necessary to look into the further development of the VALID IV System to ensure that it can cope with future demands and service enhancement.

5. TD commissioned a technical consultancy study in September 2012 to review the existing infrastructure design of the VALID IV System and identify possible areas of improvements. The study reveals that the current infrastructure design of the VALID IV System, which is a component-based architecture with an open and scalable framework, is still a commonly adopted design and should be sustainable in the foreseeable future. Nevertheless, the aging hardware and software may not be able to support the increasing business demands and future operational needs. It is also expected that with aging hardware and software, the unplanned down time of the VALID IV System might increase, reducing its compatibility, reliability and availability. Moreover, as there will be no service support for the outdated software and no spare parts for the aged hardware, TD may not be able to secure comprehensive maintenance coverage for the VALID IV System upon the expiry of the current 10-year maintenance contract in September 2017.

6. In late 2012, TD also studied new business needs and planned implementation of information technology systems that would interface with the VALID IV System. It was revealed that the existing performance and functionality of the VALID IV System were still able to satisfy the service needs in general, and there was no major new user requirement requiring total replacement of the VALID IV System.

7. In the light of the findings in paragraphs 5 and 6 above, TD does not consider there is sufficient justification to redevelop the whole system which would require a non-recurrent expenditure of about \$220,000,000. We therefore propose to enhance the infrastructure of the VALID IV System by replacing the aging

/hardware

hardware and software with updated ones, and aligning with the latest technologies so as to ensure continuity of service of the VALID IV System. It is expected that with the enhanced infrastructure, the service life of the VALID IV System will be extended by about ten years.

ANTICIPATED BENEFITS

8. The proposal will bring about enhancements in the following areas –
- (a) System sustainability
Timely replacement of the aging hardware and software will ensure the continuity of the VALID IV System in providing reliable vehicle and driving licensing services to the public.
 - (b) Business capability
The capacity and performance of the VALID IV System will be improved with the adoption of new/updated technology. This will enable us to cope with the increasing service demands and respond more speedily to new initiatives for meeting operational needs.
 - (c) System security
With upgrading/replacement of the outdated software, up-to-date security patches can be applied to continue safeguarding the VALID IV System.
 - (d) End User Computing Tool^{Note} for management reporting
The aged End User Computing Tool for statistical report extraction will be replaced with the latest version which is more user friendly and efficient.
 - (e) Availability of TD e-services to the public
The services of the existing VALID IV System have to be suspended for a total of eight hours every month for scheduled maintenance. TD e-Services to the public which require access to the System need to be suspended as well. We estimate that such suspension affect about 4 000 e-Services transactions each year. The enhanced VALID IV System will adopt the latest technology to minimise service suspension caused by scheduled maintenance. Also, as the aging hardware and software will be upgraded/replaced and the supply system of back-up power strengthened, the likelihood of service disruption due to unscheduled maintenance or power failure will be reduced. These together will improve the availability of those TD e-Services to the public which require access to the System such as application for renewal of vehicle and driving licences, booking for driving tests, reservation of traditional/personalised vehicle registration marks, etc.

/Cost-benefit

^{Note} End User Computing Tool enables users to enquire information and generate reports from the VALID IV System upon request.

Cost-benefit Analysis

9. With the launch of the enhanced System which will bring about the above benefits, there will be an annual realisable saving of \$15,802,000, being the annual recurrent maintenance and operational costs of the existing VALID IV System. At the same time, it is estimated that the annual recurrent expenditure arising from maintaining and operating the enhanced system will be \$6,761,000 in 2017-18 and will increase to \$24,941,000 by 2018-19 and beyond. Taking into account the realisable saving of \$15,802,000, the proposal will require a net increase in recurrent expenditure of \$9,139,000 per annum from 2018-19 onwards. Given that the project is an enhancement of the infrastructure of the existing system, TD's workflow and working procedures for processing licensing applications and transactions will remain unchanged with the enhanced system. Hence, there will be no reduction in manpower requirements.

Encl. 10. The detailed cost and benefit analysis for the proposal is at the Enclosure.

FINANCIAL IMPLICATIONS

Non-recurrent Expenditure

11. We estimate that the total non-recurrent expenditure of the proposal will be \$71,284,000 over four years from 2014-15 to 2017-18, with the following breakdown –

	2014-15	2015-16	2016-17	2017-18	Total
	\$'000	\$'000	\$'000	\$'000	\$'000
(a) Hardware	-	-	7,886	11,828	19,714
(b) Software	-	-	4,761	7,142	11,903
(c) Communication Network	-	210	504	378	1,092
(d) Implementation Services	-	-	9,424	14,137	23,561
(e) Site Preparation	990	1,760	-	-	2,750
(f) Training	-	-	112	168	280
(g) Consumables	-	-	108	251	359
(h) Accommodation	-	656	1,604	1,385	3,645
(i) Assessment Tests	-	-	975	525	1,500
(j) Contingency	-	-	-	6,480	6,480
Total	990	2,626	25,374	42,294	71,284

12. As regards paragraph 11(a) above, the estimate of \$19,714,000 is for the acquisition of computer hardware including servers, Storage Area Network storage and backup tape solution, network equipment, etc.

13. As regards paragraph 11(b) above, the estimate of \$11,903,000 is for the acquisition of software licences for servers (web, application and database), including operating systems, application and web server software, database management system, report server software, system administration and monitoring software, etc.

14. As regards paragraph 11(c) above, the estimate of \$1,092,000 is for the subscription of required network bandwidth.

15. As regards paragraph 11(d) above, the estimate of \$23,561,000 is for the acquisition of service from an external service provider to implement the project including overall project management, infrastructure design and setup, system migration, programme migration, data conversion, user acceptance tests (UAT) support, etc.

16. As regards paragraph 11(e) above, the estimate of \$2,750,000 is for the site preparation work in Primary Data Centre, Secondary Data Centre, Development and UAT site.

17. As regards paragraph 11(f) above, the estimate of \$280,000 is for the acquisition of training services on the new End User Computing Tool as well as the system operation of the new environment.

18. As regards paragraph 11(g) above, the estimate of \$359,000 is for the acquisition of start-up consumables such as printer consumables and tapes for system backup.

19. As regards paragraph 11(h) above, the estimate of \$3,645,000 is for the provision of office space for the external service provider and users for carrying out the project implementation and UAT respectively.

20. As regards paragraph 11(i) above, the estimate of \$1,500,000 is for carrying out the Privacy Impact Assessment and Security Risk Assessment to identify possible privacy and security risks and recommend corresponding remedial measures before system rollout.

21. As regards paragraph 11(j) above, the estimate of \$6,480,000 represents a 10% contingency on the items set out in paragraph 11(a) to (i).

Other non-recurrent expenditure

22. A project team will be set up in TD for implementation of the proposal, including tendering, project management, support for system analysis and design, conducting UAT, etc. The project team will entail a total non-recurrent staff cost of about \$27,600,000 from 2014-15 to 2017-18.

Recurrent Expenditure

23. We estimate that the recurrent expenditure arising from the project will be \$6,761,000 in 2017-18 and will increase to \$24,941,000 per annum from 2018-19 onwards, with the breakdown as follows –

	2017-18	2018-19 onwards
	\$'000	\$'000
(a) Hardware and Software	-	6,814
(b) On-going Support Services	-	8,540
(c) Communication Network	1,124	1,253
(d) Staff Cost	5,393	8,090
(e) Consumables	244	244
Total	6,761	24,941

24. As regards paragraph 23(a) above, the estimate of \$6,814,000 is for the maintenance of system hardware and software licence renewal to support the new infrastructure.

25. As regards paragraph 23(b) above, the estimate of \$8,540,000 is for on-going system maintenance and support, helpdesk services, minor application enhancements, etc.

26. As regards paragraph 23(c) above, the estimate of \$1,253,000 is for the subscription of Wide Area Network links across data centres and TD offices, on-going network maintenance and support of the TD network.

27. As regards paragraph 23(d) above, the estimate of \$8,090,000 is staff cost for day-to-day system monitoring and handling of on-going enhancements on the enhanced VALID IV System.

28. As regards paragraph 23(e) above, the estimate of \$244,000 is for consumable expenses including tapes for system backup, printer consumables, etc.

IMPLEMENTATION PLAN

29. We plan to start the implementation of the project in the first half of 2014 for completion by the third quarter of 2017. The proposed implementation plan is set out below –

Activity	Target completion date
(a) Preparation of tender documents and invitation of tender	January 2015
(b) Tender evaluation and contract award	October 2015
(c) Project implementation	
- System design	April 2016
- System implementation and UAT	May 2017
- System live-run	August 2017

PUBLIC CONSULTATION

30. We consulted the Legislative Council Panel on Transport on the proposal on 20 December 2013. The Panel supported the proposal.

BACKGROUND

31. The Finance Committee approved in June 2001, vide FCR(2001-02)21, the creation of a commitment of \$110,000,000 for the “Replacement of the Vehicles and Drivers Licensing Integrated Data III System” with the VALID IV System. The VALID IV System was developed starting from 2003 and came into operation in 2007. The major licensing services which the System catered for in 2013 are highlighted as follows –

/Number

	Number of Transactions
(a) Issue and Renewal of Vehicle Licences	782 000
(b) Issue and Renewal of Driving Licences	287 000
(c) Addition of Driving Entitlement	200 000
(d) Transfer of Ownership of Vehicles	172 000
(e) Arrangement of Driving Tests	149 000
(f) Issue of International Driving Permits	146 000
(g) Retention of Vehicle Registration Marks	101 000
(h) Change of Particulars of Drivers	83 000
(i) Assigning of Vehicle Registration Marks	81 000

Transport and Housing Bureau
January 2014

Cost and Benefit Analysis of the Infrastructure Enhancement for the VALID IV System

	Cash flow (\$'000)										
	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	Total
Cost											
Non-recurrent											
- Expenditure	990	2,626	25,374	42,294	-	-	-	-	-	-	71,284
- Staff Cost	5,111	5,937	8,655	7,894	-	-	-	-	-	-	27,597
Sub-total	6,101	8,563	34,029	50,188	-	-	-	-	-	-	98,881
Recurrent											
- Expenditure	-	-	-	1,368	16,851	16,851	16,851	16,851	16,851	16,851	102,474
- Staff Cost	-	-	-	5,393	8,090	8,090	8,090	8,090	8,090	8,090	53,933
Sub-total	-	-	-	6,761	24,941	24,941	24,941	24,941	24,941	24,941	156,407
Total Cost	6,101	8,563	34,029	56,949	24,941	24,941	24,941	24,941	24,941	24,941	255,288
Savings											
Realisable Savings											
- Expenditure	-	-	-	7,587	7,712	7,712	7,712	7,712	7,712	7,712	53,859
- Staff Cost	-	-	-	5,393	8,090	8,090	8,090	8,090	8,090	8,090	53,933
Sub-total	-	-	-	12,980	15,802	15,802	15,802	15,802	15,802	15,802	107,792
Total Savings	-	-	-	12,980	15,802	15,802	15,802	15,802	15,802	15,802	107,792
Net Shortfall	6,101	8,563	34,029	43,969	9,139	9,139	9,139	9,139	9,139	9,139	147,496
Net Cumulative Shortfall	6,101	14,664	48,693	92,662	101,801	110,940	120,079	129,218	138,357	147,496	
