

ITEM FOR FINANCE COMMITTEE

CAPITAL WORKS RESERVE FUND

HEAD 710 – COMPUTERISATION

Hong Kong Police Force

Replacement of the Infrastructure Platform for the Police Operational Nominal Index Computer System and the Criminal Intelligence Computer System

Members are invited to approve a new commitment of \$81,672,000 for the replacement of an obsolete infrastructure platform that supports Hong Kong Police's computer systems.

PROBLEM

The infrastructure platform that currently supports the Police Operational Nominal Index Computer System (PONICS) and the Criminal Intelligence Computer System (CICS) is approaching the end of its serviceable lifespan.

PROPOSAL

2. The Commissioner of Police, with the support of the Secretary for Security and the Government Chief Information Officer, proposes to replace the existing infrastructure platform in order to maintain an effective daily operation of law enforcement agencies and analysis of criminal activities.

/JUSTIFICATION

JUSTIFICATION

3. The two operation support systems, PONICS and CICS, are currently residing on the same information technology (IT) infrastructure platform. The systems and the IT infrastructure platform were last upgraded with funds approved by Legislative Council (LegCo) in 2000 vide FCR(1999-2000)72 for procurement and development by 2005, and delivery of completed systems in 2007. The systems and the platform are reaching the end of their estimated ten-year lifespan. With the proposed replacement of the infrastructure platform, the applications of the two systems can continue to be used through appropriate updates to the current software version to continue supporting the business requirements. There is no change in the functionality of the two systems.

PONICS

4. The maintenance of criminal records in Criminal Records Bureau was fully computerised in 1991 through a system named PONICS. In 2007, PONICS was enhanced to provide a web-based system with graphical user interface and improved functionalities. PONICS maintains a central repository of criminal records in Hong Kong and details of all persons who are signified by the Hong Kong Police (HKP) as “Missing Persons” or “Wanted Persons”. The system is vital to the daily operations of HKP, Correctional Services Department, Customs and Excise Department (C&ED), Immigration Department (ImmD) and Independent Commission Against Corruption (ICAC) which rely on the system to retrieve criminal records and to locate “Wanted and/or Missing persons”. In addition to recording criminal convictions and “Wanted and/or Missing persons”, PONICS contains information such as non-traffic arrest warrants and persons whose DNA samples have been taken for prevention and detection of crimes, which are useful for day-to-day law enforcement functions. It also serves as the single authoritative criminal record for the Hong Kong Special Administrative Region for reference and for production at the request of the Judiciary ahead of sentencing. For instance, Criminal Record Summary and Case Result Reports are generated by the PONICS and are submitted to the Court by despatch before 9 a.m. on the first day of proceedings for use in sentencing or imposing fines.

5. Another feature of the system is that it automates the arrest processing in HKP, C&ED, ImmD and ICAC. An arrest form containing personal information needs to be produced for each person arrested. The arrested person will also be photographed and finger-printed. The PONICS system automates these procedures by generating the electronic arrest forms, incorporating the digital

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photos taken for arrested persons and then linking the data with the fingerprint system of HKP to enable identification of the arrested persons and preparation of the required documents ahead of court proceedings. As at October 2015, there were around 1.1 million criminal records in the PONICS.

6. Any interruption to PONICS services would seriously affect the maintenance and production of criminal records for court proceedings, as well as HKP's daily policing work if the system cannot be accessed to ascertain whether a person is wanted or missing. Likewise, operations by C&ED, ImmD and ICAC would be seriously hampered. Moreover, the electronic arrest processing procedures for all their arrested persons would not function if the services of PONICS were interrupted.

CICS

7. The CICS is a system that assists HKP in preventing and detecting crimes by drawing together and analysing information related to criminal activities. It was first developed in 1989 and subsequently enhanced in 1993 and 2007 respectively. Analysis of the crime information collated through CICS provides reliable and actionable intelligence to combat crimes. It is essential for prevention and detection of drug trafficking, organised crimes, as well as other violent and serious crimes. The criminal intelligence generated through CICS is also crucial in supporting HKP's capability and response in counter terrorism.

8. The CICS provides analytical tools capable of performing timely and efficient correlation across data in support of ongoing investigations and operations against sophisticated or complex crimes. To assist proactive operations against serious criminal activities and investigations into serious crimes, intelligence analysts conduct analysis in CICS to identify potential criminal targets, related addresses, associates, etc., to establish clues and lines of investigations with a view to preventing and detecting crimes. Frontline Police officers can use the system to identify blackspots, patterns and special crime characteristics so as to effectively deploy Police resources to tackle crimes on a daily basis.

NEED FOR REPLACEMENT

9. The existing infrastructure platform which supports the two systems is approaching the end of its serviceable lifespan. In 2013, the maintenance contractor examined the platform and found that a number of its components had shown signs of aging.

10. The existing maintenance support service will expire in May 2017. Support from the manufacturers after May 2017 will be minimal due to the lack of supply of major hardware components (e.g. hard disks, storage area network switches) and outdated software, hence resulting in a high risk of system failure which cannot be recovered easily. This is highly undesirable as it will affect the reliability and serviceability of the infrastructure platform and also the two systems riding on it. It is necessary to ensure business continuity by replacing the present infrastructure platform with a new one for PONICS and CICS as soon as possible.

11. While the replacement of the infrastructure will not bring about new functions to PONICS and CICS, the new infrastructure platform will be more stable and reliable for supporting PONICS and CICS. The adoption of the latest hardware and software technology components will enhance the processing speed and allow automation in the inputting processes in line with current technology standards. The resilience and disaster recovery design, in case of system failure, would also be improved so that the service availability of the infrastructure platform and the systems would be properly maintained in case of unexpected incidents, e.g. fire outbreak, power outage. The new infrastructure platform and the systems are estimated to have a lifespan of about ten years upon completion of the migration.

12. To ensure smooth migration without affecting the current daily operations of the law enforcement agencies, we need to allow sufficient lead time for tendering, design, installation, testing and the actual system migration for the infrastructure platform to tie in with the expiry of the existing infrastructure platform in 2017. Subject to the funding approval of Finance Committee (FC), HKP aims to commission the new infrastructure platform by 2017 followed by the migration of the two affected systems to the new platform. HKP will then upgrade the obsolete application software of the systems which will take 19 months.

ANTICIPATED BENEFITS OF THE PROPOSAL

13. Upon completion of the project by late 2018, we anticipate that there would be realisable annual savings of \$6,038,000 arising from the removal of annual maintenance cost of the existing platform as it will be no longer required. In addition, the new platform will achieve notional annual savings of \$5,481,000 in staffing resources arising from improvement in efficiency through enhanced processing speed and automation in the inputting process. A cost and benefit analysis is set out at Enclosure.

Encl.

/FINANCIAL

FINANCIAL IMPLICATIONS**Capital expenditure**

14. It is estimated that the non-recurrent cost of the proposed IT infrastructure project will be \$81,672,000, with breakdown as follows –

	\$'000
(a) Hardware for the infrastructure platform	13,842
(b) Software for the infrastructure platform	21,996
(c) Implementation services	28,307
(d) Project management	10,102
(e) Contingency (10% of items (a) to (d))	7,425
Total:	81,672

15. On paragraph 14(a) above, the estimate is for the acquisition of computer hardware, including servers, network switches and storage devices.

16. On paragraph 14(b) above, the estimate is for the acquisition of computer software, including operating system software, database management software, data analysis software and server monitoring software.

17. On paragraph 14(c) above, the estimate is for system implementation services, including infrastructure platform design and implementation, system migration, security risk assessment and privacy impact assessment.

18. On paragraph 14(d) above, the estimate is for the engagement of contract staff to supplement the in-house project management team during the implementation to provide support in project planning, procurement, system integration, quality assurance, system acceptance, contract management and overall project management.

19. On paragraph 14(e) above, the estimate represents 10% of the contingency on the items 14(a) to (d).

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The estimated cash flow requirements are as follows –

Year	\$'000
2015–16	1,420
2016–17	31,766
2017–18	37,544
2018-19	10,942
Total:	81,672

Recurrent expenditure

20. The estimated annual recurrent cost of the proposal is \$9,596,000 (for 2017-18), \$12,151,000 (for 2018-19) and \$13,957,000 from 2019-20 onwards. This recurrent cost will be partly offset by the realisable savings mentioned in paragraph 13 above and the net additional recurrent expenditure of \$7,919,000 in a full year will be reflected in the Estimates of relevant years. No additional staff cost will be incurred. The breakdown is as follows –

	2017-18	2018-19	2019-20
	\$'000	\$'000	\$'000
(a) Hardware Maintenance	1,767	2,104	2,104
(b) Software Maintenance	2,288	4,388	4,388
(c) On-going Support Services	5,447	5,565	7,371
(d) Communication Network	94	94	94
Total:	9,596	12,151	13,957

/IMPLEMENTATION

IMPLEMENTATION PLAN

21. Subject to the funding approval of FC, HKP plans to implement the project according to the following schedule –

Timing

- | | | |
|-----|--|-----------------------------|
| (a) | Tendering, evaluation and award of contract | December 2015 – March 2016 |
| (b) | Design of the infrastructure platform | April – August 2016 |
| (c) | Delivery and installation of hardware and software, and testing of the infrastructure platform | September 2016 – April 2017 |
| (d) | Commissioning of the infrastructure platform for system migration | May 2017 – November 2018 |

PUBLIC CONSULTATION

22. We consulted the LegCo Panel on Security on 10 April 2015. Members raised no objection to seeking FC's funding approval for the proposal.

Security Bureau
November 2015

Cost and Benefit Analysis
Replacement of the Infrastructure Platform for the Police Operational Nominal Index Computer System
and the Criminal Intelligence Computer System

	Cash Flow (\$'000)								
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	Total
(A) Cost									
Capital Expenditure	1,420	31,766	37,544	10,942	-	-	-	-	81,672
Recurrent Expenditure	-	-	9,596	12,151	13,957	13,957	13,957	13,957	77,575
Total cost	1,420	31,766	47,140	23,093	13,957	13,957	13,957	13,957	159,247
(B) Realisable saving	-	-	4,311	5,259	6,038	6,038	6,038	6,038	33,722
(C) Net cost	1,420	31,766	42,829	17,834	7,919	7,919	7,919	7,919	125,525
[(A) – (B)] Net cumulative cost	1,420	33,186	76,015	93,849	101,768	109,687	117,606	125,525	-
Anticipated benefits in terms of staff cost saving (notional)	-	-	-	2,284	5,481	5,481	5,481	5,481	24,208
