

ITEM FOR FINANCE COMMITTEE

CAPITAL WORKS RESERVE FUND

HEAD 710 – COMPUTERISATION

Hong Kong Police Force

New Subhead “Development of the Second Generation of Communal Information System”

Members are invited to approve a new commitment of \$411,272,000 for the development of the Second Generation of Communal Information System of the Hong Kong Police Force.

PROBLEM

The Hong Kong Police Force (HKPF) needs to replace its existing Communal Information System (CIS) to meet evolving operational, legal, social and information technology (IT) requirements.

PROPOSAL

2. The Commissioner of Police, with the support of the Secretary for Security and the Government Chief Information Officer, proposes to create a new commitment of \$411,272,000 to develop the Second Generation of Communal Information System (CIS2).

JUSTIFICATION

3. HKPF is committed to continuously improving its operational efficiency and service quality to better serve the community. The CIS, commissioned in 1997, is a key system extensively used by HKPF in its daily law enforcement operations. Having regard to the remaining useful life of the existing system and the lead time required for the design and procurement of a new system,

/HKPF

HKPF considers it necessary to start the development of CIS2 now so that it can reap the benefits of the advancement in technology over the years to further strengthen its law enforcement capability.

The Existing CIS

4. The existing CIS captures, maintains and processes details of cases reported, assists in prosecution, generates management reports for crime prevention, and supports traffic operations. In terms of system interface, the CIS serves as a major feeder system to other HKPF's systems¹ for crime intelligence and road safety purposes, and exchanges information with the systems of other departments and public entities, like the Case and Summons Management System for Magistracies of the Judiciary. Most of the information exchanges between the CIS and other internal and external systems are conducted manually.

5. At present, there are around 20 000 CIS users comprising disciplined and civilian staff in all police stations and formations. Information reported by members of the public or processed by the police officers is entered into the CIS in the form of a police case. In 2009, the CIS handled a total of 1.4 million cases which involved about 129 500 arrested persons (APs) and 1.2 million case-related properties. It also processed over 63 200 case charges submitted to the court in 2009.

Constraints of the Existing CIS

6. As the system architecture and design of the existing CIS were developed over ten years ago, there is a need to start developing CIS2 to meet changing operational, legal, social and IT requirements. The existing CIS has the following limitations –

- (a) Its hardware and software maintenance contract will expire in 2013. It cannot be further extended or undertaken by other contractors due to aging, and the key system components of the CIS are out of production.

/(b)

¹ For instance, the CIS feeds data to the Police Email Network for dissemination of crime and missing person messages, etc. among police formations. The CIS also passes crime intelligence information to Criminal Intelligence Computer System III for investigation purpose and passes traffic case details to the Force Information Datamart (FIND) to generate analytical report for traffic regions.

- (b) Service consistency and procedure-compliance in HKPF are currently enforced through the issue of written instructions. HKPF has taken proactive steps to improve the situation, for example, by introducing new requirements for recording details of the custody searches of detainees into the CIS. However, due to the limited capacity of the CIS, HKPF currently relies mainly on supervisory checks on case records to ensure compliance with procedural requirements.
- (c) The existing CIS is supported by a divided system architecture with separate sets of database maintained by individual police formations and non-standardised data definition. Such a design is not the best solution for meeting the present day requirements for case processing and generating information for criminal analysis and action planning. For example, case information for multiple APs involved in the same case cannot be recorded in parallel; information of missing persons has to be sent by multiple emails manually to different police stations and formations for alert; and certain compilation of data can only be carried out manually.
- (d) After substantial expansion in the business scope of the existing CIS over the years, its system capability leaves little room for further enhancement to fully support ever-growing operational requirements.

The Proposed System and Its Benefits

7. The proposed new CIS2 will take advantage of the latest available technology and ride on a new system architecture and design to address the limitations of the existing CIS and provide new features to further improve the operational efficiency of HKPF. It will consolidate seven in-house satellite IT systems², and will provide more sophisticated interface with systems of other government departments and public entities, such as information exchange with the Social Welfare Department on domestic incidents and with the Judiciary on warrant of arrest and subsequent actions. The new system features will bring the following anticipated benefits –

- (a) Enhanced operational efficiency

The CIS2 will enable parallel processing of APs involved in the same case, trail of detainees and property movements as well as compilation of management and crime reports, etc. These enhanced features will

/promote

² The seven in-house satellite IT systems are Modus Operandi Computer System, Crime Trend Analysis Programme, FIND, Incident Mapping System, Crime Information Database on Police Intranet, Traffic Complaint Indexing System and Traffic Warrants Index System.

promote HKPF's efficiency in daily operations and performance of more in-depth crime trend and pattern analysis. In addition, the beat patrol coverage can be improved as the reliance on ad hoc deployment of local patrolling officers to backup the Report Room would be reduced.

(b) Enhanced crime analysis and action planning

The CIS2 will have linkages with internal systems as well as standardised case data definition. With the support of intelligence tools, the new system will enable timely and accurate retrieval of case data by different functions to meet HKPF's operational needs. The CIS2 can therefore facilitate crime analysis, manpower planning for major incidents/events, as well as planning for anti-crime and traffic management operations and fight-crime campaigns. For instance, the CIS2, supported by the Geographical Information System functions, will provide a holistic view of crime map for effective beat patrol and traffic control deployment.

(c) Assurance of service consistency and quality

The CIS2 will adopt a "procedure-driven" concept by using technology solutions to automate business processes. Front-line officers will need to follow step-by-step procedures in the system when handling APs, found properties and summons. This new feature will both promote consistency and strengthen supervision.

(d) Enhanced security control and data protection

The CIS2 will enhance security control on data protection and strengthen integrity management by introducing a multiple-factor authentication mechanism and an audit trail measure for access.

(e) Expanded service channels for public

The CIS2 will provide for the establishment of an e-Report Centre which will offer customer-centric internet reporting service to the public for non-emergency incidents such as loss of property. There will be no need for the public to visit local police stations for these incidents. In addition, the e-Report Centre will act as a centralised Call Centre with a dedicated phone number for receiving information from the public on cases of public interest. The Call Centre will also answer phone calls overflowed from busy Report Rooms.

8. Due to the enhancement in CIS features, such as automated business processes which allow more users to have direct access to the system at the same time, the number of officers which can be allowed to have access to the CIS will increase from 20 000 to 28 000.

Cost Savings/Avoidance

9. We estimate that the implementation of the proposed CIS2 will bring about annual savings of \$93,347,000 per annum from 2016-17 onwards, comprising –

- (a) Realisable savings of \$11,060,000 per annum

The realisable savings represent savings from the maintenance cost of the existing CIS. The savings will be used to cover part of the recurrent expenditure for the proposed CIS2.

- (b) Notional savings of \$59,660,000 per annum

The notional savings will be achieved through more efficient administration of property items by the Property Offices of police stations, and reduction in the time spent on handling APs in Report Rooms and case coding work for crime analysis in District Intelligence Sections. The notional savings in manpower will be scattered among different formations of HKPF and will be internally redeployed to man the new e-Report Centre, discharge beat patrol duty, provide better support for intelligence gathering and extend the service hours of some of the Property Offices for claiming back lost properties by members of the public.

- (c) Cost avoidance of \$22,627,000 per annum

The cost avoidance represents the recurrent expenses for a revamped CIS, which means replacement of hardware and software without enhancement of system functions of the current CIS.

In addition, we anticipate that there will be a one-off cost avoidance of \$219,825,000 for developing a revamped CIS.

Encl. 10. A cost and benefit analysis for the proposed development of CIS2 is at Enclosure.

FINANCIAL IMPLICATIONS**Non-recurrent Expenditure**

11. We estimate that the proposed implementation of CIS2 will require a non-recurrent capital cost of \$411,272,000 over a seven-year period from 2010-11 to 2016-17, with breakdown as follows –

	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
(a) Hardware	-	812	5,165	121,816	1,600	-	-	129,393
(b) Software	-	4,876	13,178	66,367	625	-	-	85,046
(c) Implementation services	-	9,549	19,097	-	65,653	26,980	20,795	142,074
(d) Contract staff	1,166	4,969	4,969	4,969	2,031	587	277	18,968
(e) Site preparation	-	-	4,248	3,089	-	-	-	7,337
(f) Communication services	-	-	-	7,006	73	-	-	7,079
(g) Consumables	-	-	-	792	528	-	-	1,320
(h) Training	-	-	-	188	283	-	-	471
Sub-total	1,166	20,206	46,657	204,227	70,793	27,567	21,072	391,688
(i) Contingency	58	1,010	2,333	10,211	3,540	1,378	1,054	19,584
Total	1,224	21,216	48,990	214,438	74,333	28,945	22,126	411,272

12. On paragraph 11(a) above, the estimate of \$129,393,000 is for the acquisition of computer hardware, including servers, workstations and printers.

13. On paragraph 11(b) above, the estimate of \$85,046,000 is for the acquisition of computer software, including operating system software, database management software, data analysis software, workflow software, content management software and personal computer software.

14. On paragraph 11(c) above, the estimate of \$142,074,000 is for system implementation services, including system installation, system design and development, and project management.

15. On paragraph 11(d) above, the estimate of \$18,968,000 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, quality assurance, system acceptance and contract management.

16. On paragraph 11(e) above, the estimate of \$7,337,000 is for site preparation for accommodating the servers and equipment, including provision of electricity supply facilities, trunking and cabling.

17. On paragraph 11(f) above, the estimate of \$7,079,000 is for the acquisition of network equipment to upgrade the existing network of HKPF to cater for the increased workload of the new system.

18. On paragraph 11(g) above, the estimate of \$1,320,000 is for the acquisition of start-up consumables such as backup tapes, toner cartridges and printer toners.

19. On paragraph 11(h) above, the estimate of \$471,000 is for the training of trainers, end-users and system administrators on new system functions and system administration.

20. On paragraph 11(i) above, the estimate of \$19,584,000 represents a 5% contingency on the items set out in paragraphs 11(a) to (h) above.

Other Non-recurrent Expenditure

21. The proposed implementation of the CIS2 will entail an additional non-recurrent staff cost of \$124,497,000. The cost represents a total of 2 318 man-months of police officers, civilian staff and IT staff for managing the project. HKPF will absorb the requirements.

/Recurrent

Recurrent Expenditure

22. We estimate that the recurrent expenditure arising from the project will be \$46,377,000 per annum from 2017-18 onwards. Such requirements will be reflected in the Estimates of the relevant years, with breakdown as follows –

	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
	\$'000	\$'000	\$'000	\$'000	\$'000	onwards
						\$'000
(a) Hardware maintenance	81	81	19,187	19,474	19,474	19,474
(b) Software licence and maintenance	535	3,276	14,560	14,703	14,703	14,703
(c) Communication services	-	-	-	-	2,636	3,989
(d) Ongoing system support and maintenance	-	-	3,917	3,989	3,989	7,907
(e) Consumables	-	-	101	304	304	304
Total	616	3,357	37,765	38,470	41,106	46,377

23. On paragraph 22(a) above, the estimated annual expenditure of \$19,474,000 is for the provision of hardware maintenance for servers and workstations.

24. On paragraph 22(b) above, the estimated annual expenditure of \$14,703,000 is for the licence fees and maintenance expenses for the system software.

25. On paragraph 22(c) above, the estimated annual expenditure of \$3,989,000 is for the rental of communication data lines.

26. On paragraph 22(d) above, the estimated annual expenditure of \$7,907,000 is for the contract services to provide on-going application support for system operation, minor enhancement, infrastructure support on database administration, network, and system performance tuning.

/27.

27. On paragraph 22(e) above, the estimated annual expenditure of \$304,000 is for acquisition of consumables such as backup tapes and printer toners.

28. HKPF will redeploy a total of 66 man-months of police officers and IT staff to provide system support and administration, entailing a recurrent staff cost of \$4,982,000 per annum. No additional recurrent staffing will be required.

IMPLEMENTATION PLAN

29. We plan to implement the proposed CIS2 according to the following schedule –

Activity	Target completion date
(a) Tender and specification preparation	June 2010
(b) Tendering and award of contract	April 2011
(c) System analysis and design	April 2012
(d) System development and roll-out of existing CIS functions	June 2014
(e) System implementation and roll-out of e-Report Centre	June 2015
(f) Roll-out of other new system functions	November 2015

PUBLIC CONSULTATION

30. We consulted the Legislative Council Panel on Security on the proposal on 13 April 2010. Members generally supported the proposal and raised no objection to submitting it to the Finance Committee (FC) for funding approval.

/BACKGROUND

BACKGROUND

31. On 29 January 1993 and 19 July 1996, FC approved a commitment of \$299,370,000 (later revised to \$289,770,000) and an increase in commitment of \$66,000,000 respectively for the implementation of the IT Strategy of HKPF. Under this strategy, the CIS was launched in 1997 to replace the manual Miscellaneous Report Book in individual Report Rooms with a non-recurrent expenditure of \$146,410,000. On 10 May 2002, FC approved a commitment of \$17,440,000 for HKPF to upgrade CIS and expand its capacity to cope with the growing operational need.

32. During the discussions of the Legislative Council Panel on Security on the handling of custody searches of detainees in early 2008, the Administration informed Members that HKPF would consider redeveloping the CIS to address limitations of the current system and to enhance its functions for recording and retrieving essential data. As an interim measure, partial enhancements were made to the CIS from July 2008 to improve the recording of custody searches of detainees.

Security Bureau
May 2010

Cost and Benefit Analysis for the Proposed Development of the CIS2

	Cash flow (\$'000)												
	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	Total
Cost													
Non-recurrent													
- Expenditure	1,224	21,216	48,990	214,438	74,333	28,945	22,126	-	-	-	-	-	411,272
- Staff cost	2,639	26,603	26,603	26,603	23,614	12,537	5,898	-	-	-	-	-	124,497
Sub-total	3,863	47,819	75,593	241,041	97,947	41,482	28,024	-	-	-	-	-	535,769
Recurrent													
- Expenditure	-	-	616	3,357	37,765	38,470	41,106	46,377	46,377	46,377	46,377	46,377	353,199
- Staff cost	-	-	-	-	-	-	1,661	4,982	4,982	4,982	4,982	4,982	26,571
Sub-total	-	-	616	3,357	37,765	38,470	42,767	51,359	51,359	51,359	51,359	51,359	379,770
Total cost	3,863	47,819	76,209	244,398	135,712	79,952	70,791	51,359	51,359	51,359	51,359	51,359	915,539
Savings													
Non-recurrent													
- Cost avoidance	-	164,869	54,956	-	-	-	-	-	-	-	-	-	219,825
Sub-total	-	164,869	54,956	-	-	-	-	-	-	-	-	-	219,825
Recurrent													
- Realisable savings	-	-	-	-	7,769	10,592	11,060	11,060	11,060	11,060	11,060	11,060	84,721
- Notional savings	-	-	-	-	33,791	50,941	59,660	59,660	59,660	59,660	59,660	59,660	442,692
- Cost avoidance	-	-	15,085	22,627	22,627	22,627	22,627	22,627	22,627	22,627	22,627	22,627	218,728
Sub-total	-	-	15,085	22,627	64,187	84,160	93,347	93,347	93,347	93,347	93,347	93,347	746,141
Total savings	- 164,869	70,041	22,627	64,187	84,160	93,347	93,347	93,347	93,347	93,347	93,347	93,347	965,966
Net savings	(3,863)	117,050	(6,168)	(221,771)	(71,525)	4,208	22,556	41,988	41,988	41,988	41,988	41,988	50,427
Net cumulative savings	(3,863)	113,187	107,019	(114,752)	(186,277)	(182,069)	(159,513)	(117,525)	(75,537)	(33,549)	8,439	50,427	