

ITEM FOR FINANCE COMMITTEE

CAPITAL WORKS RESERVE FUND

HEAD 710 – COMPUTERISATION

Intellectual Property Department

New Subhead “Redevelopment of the Electronic Processing Systems, E-filing System and Online Search System of the Intellectual Property Department”

Members are invited to approve a new commitment of \$67,114,000 for the redevelopment of the Electronic Processing Systems, E-filing System and Online Search System of the Intellectual Property Department.

PROBLEM

The Intellectual Property Department (IPD) needs to redevelop its Electronic Processing Systems, E-filing System and Online Search System to meet evolving customer, operational and information technology (IT) requirements.

PROPOSAL

2. The Director of Intellectual Property, with the support of the Secretary for Commerce and Economic Development and the Government Chief Information Officer, proposes to create a new commitment of \$67,114,000 to redevelop the Electronic Processing Systems, E-filing System and Online Search System into an integrated IT system.

JUSTIFICATION

Existing Electronic Processing Systems, E-filing System and Online Search System of IPD

3. The operation of the Trade Marks Registry, Patents Registry, and Designs Registry (the Registries) of IPD is supported by three Electronic Processing Systems which allow IPD’s staff to examine and process trade mark, patent and design applications and post-registration matters in paperless mode,

/including

including issuance of letters and certificates to the applicants and their agents, and online publication of trade marks, patents and designs in the Hong Kong Intellectual Property Journal.

4. In addition to the three Electronic Processing Systems which support the Registries' internal operations, IPD's E-filing System and Online Search System provide e-filing and search services to members of the public via the Internet. The E-filing System allows users registered with IPD (registered e-filers) to file forms for applications and post-registration matters electronically with the Registries via the Internet. It also allows registered e-filers to update the particulars of owners and agents of trade marks, patents and designs, and handles their requests for extension of time for trade mark applications and records of assignments and assents of trade marks online. The Online Search System is an electronic facility available to the public for searching records of trade mark, patent and design entered in the respective registers in Chinese or English via the Internet, at any time and free of charge.

5. The above five information technology systems of IPD (IPD IT systems) play a pivotal role to support the Registries to meet the increasing demands for registration of intellectual property (IP) rights. Launched in different phases since January 2003, the existing IPD IT systems are approaching the end of their serviceable life span. Taking into account the remaining life span of the aging IPD IT systems and the lead time for replacement, IPD considers it essential to commence the system replacement project in mid 2014. The proposed replacement also provides an opportunity to enhance the functions of the IPD IT systems in order to cope with changing operational needs and future developments.

Review of the IPD IT systems

6. In preparation for the system replacement, IPD commissioned in October 2012 a Feasibility Study (FS) on redeveloping the IPD IT systems with a view to meeting the department's operational needs and the users' requirements in the longer term, and optimising system performance for carrying out IPD's statutory functions for registration of trade marks, patents and designs.

7. According to the FS, IPD needs to redevelop its aging IPD IT systems to ensure sustainability of service; to integrate the isolated IT systems to enable data sharing; and to provide new and enhanced features to further improve the operational efficiency of the three Registries.

8. In February 2013, following a comprehensive review on Hong Kong's patent system, the Government announced the way forward for the development of the patent system in Hong Kong, including the introduction of an "original grant" patent system in Hong Kong, whilst retaining the current "re-registration" system, and refining the short-term patent system. The new patent system is planned to be launched in 2016-17 at the earliest subject to the progress of legislative and other preparatory work. The redevelopment of the IPD IT systems will provide the flexibility for interfacing with the future IT support required for the implementation of the new patent system in Hong Kong.

9. Against the above background and based on the result of the FS, we see a business case to redevelop the IPD IT systems to tie in with the latest business development and service needs.

Details of the Proposal

10. We propose to redevelop the IPD IT systems into an integrated IT system which will take advantage of the latest technologies to address the limitations of the existing systems and provide new and enhanced features. Details of the proposal are as follows –

- (a) Setting up an integrated system with five sub-systems, namely Trade Mark sub-system, Patent sub-system, Design sub-system, E-filing sub-system and Online Search sub-system, that could share common data and functions to save processing effort and improve accuracy;
- (b) Enhancing automation of application processing by adopting appropriate technologies such as optical character recognition and two-dimensional barcode and providing more automatic validations and letter generation to improve work efficiency and data accuracy and enable system interface with IT systems of banks and the Treasury;
- (c) Providing new and enhanced functions to meet customer's growing demands in using IPD's e-services, such as new e-Payment methods, improved e-form preparation and submission, support for authentication methods other than e-certificate, support for different Internet web browsers and operation system platforms, faster update of data in the online registers, provision of intelligent search functions, etc.;
- (d) Adopting open standards as far as practicable to support high system expandability; and
- (e) Supporting automatic switching from production environment to backup environment to improve the availability of services.

11. IPD has drawn up a phased implementation plan for the proposed project to minimise as much as possible the service interruption to the department itself, the registered e-filers and the public. The proposed project will be carried out in two phases as detailed below –

- (a) Phase 1: Implementation of three sub-systems, i.e. the Patent sub-system, the E-filing sub-system, and the Online Search sub-system; and
- (b) Phase 2: Implementation of two sub-systems, i.e. the Trade Mark sub-system, the Design sub-system, and the additional e-Payment methods and related system interfaces.

Benefits of the Proposal

12. With the enhanced system features and functions set out in paragraph 10 above, it is anticipated that the proposed project would deliver the following business benefits –

- (a) Enhancing work efficiency and productivity through more automation. For example, the automation of data capturing for typed paper forms will save data input time of clerical staff by eight to 13 minutes per form, depending on the type of form;
- (b) Sustaining the edge of Hong Kong as an innovative and knowledge-based economy. IPD was once a pioneer of electronic filing in the global IP arena back in 2003. However, as time goes by, IPD's electronic systems and services begin to lag behind in comparison with those of other advanced IP offices;
- (c) Reducing security risks arising from the lack of updated security patches for the obsolete IT currently used;
- (d) Improving system availability with the automation of switching from production to backup environment which can enhance services provided to e-filers, the public as well as internal users;
- (e) Improving system expandability. The new system will adopt open standards as far as practicable to facilitate future extension and integration with other systems when needed, so as to provide an advanced platform for IPD to build new system functions and features to meet future business needs;
- (f) Better customer experience of e-filers brought about by more user-friendly interface with new and enhanced functions;

/(g)

- (g) Wider adoption of e-filing applications and e-business in the community, resulting in higher efficiency and less paper consumption; and
- (h) Improved information and knowledge management and dissemination within IPD.

Cost Savings/Avoidance

13. We estimate that the proposal will bring about annual savings up to \$17,219,000 in 2025-26, comprising the following –

- (a) *Realisable savings of \$11,260,000 per annum*

This represents the maintenance and support cost of existing IPD IT systems. The savings will be ploughed back to offset part of the maintenance and support cost of the new integrated IT system.

- (b) *Notional savings of \$1,759,000 per annum*

The notional savings will be achieved by efficiency gain through enhanced office automation processes in data capturing and validation, letter and report generation, etc.

- (c) *Cost avoidance of \$4,200,000 per annum, comprising –*

- (i) The additional recurrent maintenance cost of \$1,028,000 per annum for an upgraded and enhanced IPD IT systems, which would otherwise be required without implementation of the new integrated IT system; and
- (ii) The additional staff cost of \$3,172,000 per annum for handling of applications in front office counters and manual input of data, which would otherwise be required due to expected growth in applications.

14. In addition, we anticipate that there will be a one-off cost avoidance of \$63,941,000 for upgrading the obsolete IT and enhancing the system functions of the existing IPD IT systems, which would otherwise be required as mentioned in paragraph 13(c)(i) above.

15. Having regard to the above cost savings and avoidance to be achieved and the financial implications of the proposed project set out in the ensuing section, it is estimated that there will be a positive net annual savings from 2018-19 onwards. The estimated cumulative savings is expected to cover the total cost of the new integrated IT system by 2025-26.

Encl. 1 16. A cost and benefit analysis for the proposed project is set out at Enclosure 1.

FINANCIAL IMPLICATIONS

Non-recurrent Expenditure

17. It is estimated that the proposed project will incur a total non-recurrent expenditure of \$67,114,000 over a five-year period from 2014-15 to 2018-19, with breakdown as follows –

	2014-15 \$'000	2015-16 \$'000	2016-17 \$'000	2017-18 \$'000	2018-19 \$'000	Total \$'000
(a) Hardware	-	-	5,699	-	-	5,699
(b) Software	-	-	11,556	-	-	11,556
(c) Communication Network	-	-	2,623	-	-	2,623
(d) Implementation Services	-	3,351	13,487	11,241	3,978	32,057
(e) Contract Staff	1,026	1,464	2,347	1,922	655	7,414
(f) Site Preparation	-	-	14	-	-	14
(g) Training	-	-	147	146	-	293
(h) Consumables	-	-	89	-	-	89
(i) Data Centre Services	-	-	1,247	-	-	1,247
(j) e-Payment Services	-	-	-	21	-	21
Subtotal	1,026	4,815	37,209	13,330	4,633	61,013
(k) Contingency	103	481	3,721	1,333	463	6,101
Total	1,129	5,296	40,930	14,663	5,096	67,114

18. On paragraph 17(a) above, the estimate of \$5,699,000 is for the acquisition of computer hardware, including servers, disk storage and network equipment (such as switches and firewalls) and other miscellaneous items such as rack.

19. On paragraph 17(b) above, the estimate of \$11,556,000 is for the acquisition of computer software, including operating systems, database management systems, application server software, reporting tool, e-form processing software, search engine, etc.

20. On paragraph 17(c) above, the estimate of \$2,623,000 is for the installation and first year subscription charges of the Wide Area Network communication lines.

21. On paragraph 17(d) above, the estimate of \$32,057,000 is for the acquisition of service from external service provider to implement the project including project management, system analysis and design, programme development, infrastructure design and setup, data conversion, user acceptance test support, end-users and system administrators training on new system functions and system administration, etc. It also covers Security Risk Assessment and Audit and Privacy Impact Assessment.

22. On paragraph 17(e) above, the estimate of \$7,414,000 is for the engagement of contract IT professional staff for the preparation of tender, procurement and project monitoring.

23. On paragraph 17(f) above, the estimate of \$14,000 is for site preparation works in the IPD computer room, including adding network nodes and power points for the new equipment, re-arranging existing equipment to make room for the new server racks, etc.

24. On paragraph 17(g) above, the estimate of \$293,000 is for training of end-users on the reporting tool.

25. On paragraph 17(h) above, the estimate of \$89,000 is for the acquisition of start-up consumables of backup tapes and cleaning cartridges.

26. On paragraph 17(i) above, the estimate of \$1,247,000 is for the setting up of and first year service charges of data centre for the hosting of the hardware and software.

27. On paragraph 17(j) above, the estimate of \$21,000 is for the setting up of and initial enrolment charges of the additional e-Payment services.

28. On paragraph 17(k) above, the estimate of \$6,101,000 represents a 10% contingency on the cost items set out in paragraph 17(a) to (j) above.

/Other

Other Non-recurrent Expenditure

29. The proposed implementation of the new integrated IT system will entail a total non-recurrent staff cost of \$14,617,000 from 2014-15 to 2018-19. The cost represents a total of 194 man-months of IT professional grade, departmental grade and general grade staff for project planning and coordination, system analysis and design, procurement and user acceptance testing. We will absorb the non-recurrent staff cost within existing resources.

Recurrent Expenditure

30. The proposed project will incur a net additional recurrent expenditure of \$417,000 in 2018-19 following the live-run of Phase 2 of the new integrated IT system. The net additional expenditure will gradually increase to \$2,037,000 per annum in 2025-26 owing to the expected growth in the number of e-form submission over the years which will lead to increase in the e-Payment service charges. The breakdown of the estimates are as follows –

	2017-18 \$'000	2018-19 \$'000	2019-20 \$'000	2020-21 \$'000	2021-22 \$'000	2022-23 \$'000	2023-24 \$'000	2024-25 \$'000	2025-26 \$'000
Gross maintenance expenditure (a)									
• Hardware & Software Maintenance	1,459	3,502	3,502	3,502	3,502	3,502	3,502	3,502	3,502
• Communication Network	1,701	2,551	2,551	2,551	2,551	2,551	2,551	2,551	2,551
• On-going System Support Services	1,250	3,779	5,058	5,058	5,058	5,058	5,058	5,058	5,058
• Contract Staff	104	314	420	420	420	420	420	420	420
• Consumables	42	42	42	42	42	42	42	42	42
• Data Centre Services	780	1,170	1,170	1,170	1,170	1,170	1,170	1,170	1,170
• e-Payment Services Charges	296	319	341	368	397	429	466	506	554
Sub-total for (a)	5,632	11,677	13,084	13,111	13,140	13,172	13,209	13,249	13,297
Less: Expenditure on existing IPD IT systems (b)	6,756	11,260	11,260	11,260	11,260	11,260	11,260	11,260	11,260
Net additional expenditure (a)-(b)	(1,124)	417	1,824	1,851	1,880	1,912	1,949	1,989	2,037

31. On item (a) of the table in paragraph 30 above, the estimated annual expenditure of \$13,297,000 is for the provision of hardware and software maintenance, the licence fees for software, the rental of Wide Area Network communication lines, the hiring of IT professional services to provide on-going system support and maintenance, the engagement of contract IT professional staff to monitor the outsourced on-going system support and maintenance services, the acquisition of replacement of backup tapes and cleaning cartridges, the service charges of data centres for the hosting of the hardware and software, and the service charges for provision of e-Payment services.

32. On item (b) of the table in paragraph 30 above, the estimated annual savings of \$11,260,000 is for the maintenance and support expenditure on existing IPD IT systems to be replaced.

33. Taking into account the savings in the maintenance and support expenditure of \$11,260,000 for the existing IPD IT systems, the proposal will require a net increase in recurrent expenditure of \$2,037,000 per annum in 2025-26. IPD will absorb this additional recurrent expenditure from within its existing resources.

Recurrent Staff Cost

34. IPD will redeploy about 4 man-months of IT staff to oversee the on-going system support and maintenance services of the new integrated IT system, entailing a recurrent staff cost of \$426,000 per annum. No additional recurrent staffing will be required.

IMPLEMENTATION PLAN

35. Subject to the funding approval of the Finance Committee (FC), IPD plans to implement the proposed project according to the following schedule –

Activity	Target Completion Date
(a) Procurement of services	October 2015
(b) Implementation of Phase 1 sub-systems including: <ul style="list-style-type: none"> ▪ System analysis and design ▪ System development ▪ User acceptance test ▪ System roll-out and live-run ▪ Systems nursing 	September 2017

/(c)

Activity	Target Completion Date
(c) Implementation of Phase 2 sub-systems including: <ul style="list-style-type: none"> ▪ System analysis and design ▪ System development ▪ User acceptance test ▪ System roll-out and live-run ▪ Systems nursing 	September 2018
(d) Project completion	October 2018

Encl. 2 A detailed implementation plan for the proposed project is set out at Enclosure 2.

PUBLIC CONSULTATION

36. We consulted the Legislative Council Panel on Commerce and Industry on the proposal on 20 May 2014. Members generally supported the proposal and raised no objection to submitting it to FC for funding approval.

BACKGROUND

37. On 19 July 1996, FC approved vide FCR(96-97)23 and FCR(96-97)49 a commitment of \$22,230,000 for the computerisation of the patent registration system in IPD. On 10 March 2000, FC approved vide FCR(1999-2000)77 a commitment of \$122,630,000 to outsource the non-core services of IPD. Among the funds so approved, \$105,200,000 was for enhancing the IT system for patent registration and developing and administering new IT systems for trade mark registration, design registration, e-filing and online search.

38. As of January 2014, IPD's three Electronic Processing Systems had about 150 internal users consisting of solicitors, IP examiners, and supporting staff; and there were 230 registered e-filers using the E-filing System. The total number of forms for trade marks, patents and designs received in 2013 were 92 316, 48 759 and 6 082 respectively, of which 57% of trade mark forms, 76% of patent forms and 71% of design forms were submitted to IPD electronically through the E-filing System. For online search, the average monthly volume of Internet searches for trade marks, patents, and designs in 2013 reached 6 938 435, 1 067 877 and 827 316 hits respectively.

Enclosure 1 to FCR(2014-15)23

**Cost and Benefit Analysis for the Redevelopment of the Electronic Processing Systems,
E-filing System and Online Search System of the Intellectual Property Department**

	Cash flow (\$'000)												
	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	Total
Cost													
Non-recurrent													
- Expenditure	1,129	5,296	40,930	14,663	5,096	-	-	-	-	-	-	-	67,114
- Staff cost	521	2,497	7,119	4,075	405	-	-	-	-	-	-	-	14,617
Sub-total	1,650	7,793	48,049	18,738	5,501	-	-	-	-	-	-	-	81,731
Recurrent													
- Expenditure	-	-	-	5,632	11,677	13,084	13,111	13,140	13,172	13,209	13,249	13,297	109,571
- Staff cost	-	-	-	106	319	426	426	426	426	426	426	426	3,407
Sub-total	-	-	-	5,738	11,996	13,510	13,537	13,566	13,598	13,635	13,675	13,723	112,978
Total cost	1,650	7,793	48,049	24,476	17,497	13,510	13,537	13,566	13,598	13,635	13,675	13,723	194,709
Savings													
Non-recurrent													
- Cost avoidance	1,129	4,964	39,594	13,551	4,703	-	-	-	-	-	-	-	63,941
Sub-total	1,129	4,964	39,594	13,551	4,703	-	-	-	-	-	-	-	63,941
Recurrent													
- Realisable savings	-	-	-	6,756	11,260	11,260	11,260	11,260	11,260	11,260	11,260	11,260	96,836
- Notional savings	-	-	-	-	1,759	1,759	1,759	1,759	1,759	1,759	1,759	1,759	14,072
- Cost avoidance	-	-	-	231	463	1,747	2,027	2,342	2,705	3,129	3,613	4,200	20,457
Sub-total	-	-	-	6,987	13,482	14,766	15,046	15,361	15,724	16,148	16,632	17,219	131,365
Total savings	1,129	4,964	39,594	20,538	18,185	14,766	15,046	15,361	15,724	16,148	16,632	17,219	195,306
Net savings	(521)	(2,829)	(8,455)	(3,938)	688	1,256	1,509	1,795	2,126	2,513	2,957	3,496	597
Net cumulative savings	(521)	(3,350)	(11,805)	(15,743)	(15,055)	(13,799)	(12,290)	(10,495)	(8,369)	(5,856)	(2,899)	597	

**Detailed Implementation Plan for the
Redevelopment of the Electronic Processing Systems, E-filing System and
Online Search System of the Intellectual Property Department**

Activity	Target Completion Date
(a) Procurement of services	October 2015
(b) Implementation of Phase 1 sub-systems including:	September 2017
▪ System analysis and design	March 2016
▪ System development	October 2016
▪ User acceptance test	January 2017
▪ System roll-out and live-run	March 2017
▪ Systems nursing	September 2017
(c) Implementation of Phase 2 sub-systems including:	September 2018
▪ System analysis and design	January 2017
▪ System development	September 2017
▪ User acceptance test	December 2017
▪ System roll-out and live-run	March 2018
▪ Systems nursing	September 2018
(d) Project completion	October 2018
