

ITEM FOR FINANCE COMMITTEE

CAPITAL WORKS RESERVE FUND

HEAD 710 – COMPUTERISATION

Office of the Government Chief Information Officer

New Subhead “Full Implementation of Electronic Recordkeeping System in the Government”

Members are invited to approve the creation of a new commitment of \$1,233,728,000 for developing a new Electronic Recordkeeping System for full implementation in the Government.

PROBLEM

In line with the global trend in electronic record keeping, particularly the exponential growth in the use of electronic records in government business, we need to provide the information technology (IT) system and related support for all government bureaux and departments (B/Ds) to manage government records.

PROPOSAL

2. The Government Chief Information Officer, with the support of the Secretary for Innovation and Technology, proposes the creation of a new commitment of \$1,233,728,000 to develop a central Electronic Recordkeeping System (ERKS) on the Government’s private cloud platform to support full implementation of ERKS in the Government by end-2025.

JUSTIFICATION

3. Adopting electronic record keeping is a global trend. Apart from private organisations, many governments (including Australia, Canada, Korea, New Zealand, Singapore and the United Kingdom) have implemented ERKS to protect their records and support their daily business more effectively through enhancing the operational efficiency and effectiveness of records management.

/4.

4. At present, government records are mostly exchanged and kept in the form of emails or electronic documents. Except for some of the B/Ds which have participated in the ERKS pilot programme, B/Ds' staff are required to print out emails and electronic documents for filing in paper folders. The Ombudsman conducted a direct investigation on management of public records in 2014, and considered that the print-and-file approach for emails was unreliable and was prone to omission and loss. It recommended the Government to map out as soon as possible a clear plan for full implementation of ERKS.

5. In 2019, the Government Records Service (GRS), Efficiency Office (EffO) and the Office of the Government Chief Information Officer (OGCIO) jointly conducted a review of the experience and effectiveness of ERKS implementation in a few B/Ds which have developed ERKS on a pilot basis. The review results showed that adoption of ERKS could help ensure compliance with the relevant legal and records management requirements and preserve documentary heritage. To enhance efficiency in preserving and managing government records, the Government announced in the Policy Address Supplement published in October 2019 the roll out of ERKS to all government B/Ds by end-2025.

The Central ERKS

6. The proposed central ERKS will be developed as a "common service platform" to support stringent requirements on the overall system capabilities and records management for rolling out of ERKS in some 75 B/Ds. This approach has the advantage of facilitating B/Ds in implementation more speedily, as they will not be required to individually procure software systems from the market and conduct system customisation and integration works. It also ensures system interoperability among B/Ds. In particular, the hosting of the platform on Government's private cloud enhances information security.

7. The proposed system will have multiple records management capabilities (such as creation of filing folders, capturing of records and retention and disposal of records, etc.) to maintain the content, context and structure of records to serve as authentic, complete and reliable evidence and records of business decisions and activities for better governance and enhanced public accountability.

Expected Benefits

8. With ERKS, staff can directly capture emails or electronic documents into ERKS in a consistent and controlled way for future retrieval. As compared with a paper-based system, ERKS can better support B/Ds' daily business by enhancing operational efficiency in records management.

9. ERKS is conducive to the preservation of government records with archival value. Records captured into ERKS cannot be modified or deleted without proper authorisation, and can only be disposed of or transferred to GRS for permanent preservation by records management staff with proper authority upon the end of the records' life cycle. A central ERKS can provide better security control and audit trail which help reduce the risk of inadvertent loss or unauthorised destruction of records.

10. ERKS will enable easier records sharing as staff members can access the same file simultaneously which is more efficient than the existing practice of circulating paper files. It can also greatly reduce the space requirements for storage of paper records.

11. The central ERKS will be built on the Government's private cloud platform within government data centres, with all records fully encrypted and centrally managed in a secure and controlled environment. It will also adopt scalable cloud servers which can be dynamically expanded to meet B/D's demands.

Implementation Arrangement

12. OGCIO, GRS and EffO will jointly undertake and support the implementation of ERKS. OGCIO will be responsible for the project management, procurement of the required software and professional services, system customisation and integration, and providing B/Ds with technical advice. GRS sets the functional requirements and recordkeeping metadata standards for the ERKS and will conduct briefings and trainings for B/Ds on government records management and the procedures for reviewing the records classification scheme. Implementation of ERKS will dramatically change how staff conduct business and EffO will provide assistance to B/Ds on change management.

Cost Savings/Avoidance

13. It is estimated that adoption of ERKS will bring about annual savings of \$263,808,000 upon full implementation of the proposal, comprising –

- (a) notional manpower savings of \$225,808,000 per annum achieved in B/Ds through efficiency gains in records management activities (viz. creation of filing folders, capturing of records, and search and retrieval of records). Since B/Ds' records management duties are shared by individual teams and officers, and most support staff only conduct records management on a part-time basis, the staff savings from B/Ds will be fragmented;

/(b)

- (b) cost savings of \$9,000,000 per annum in papers and printer cartridges from ceasing print-and-file practice; and
- (c) cost avoidance of \$29,000,000 per annum for reduced need for additional storage space for paper records.

Encl. 1 14. A cost and benefit analysis for the proposed full implementation of ERKS is at Enclosure 1.

FINANCIAL IMPLICATIONS

Non-recurrent Expenditure

15. We estimate that implementation of the proposal will incur a non-recurrent cost of \$1,233,728,000 over a period of six years from 2020-21 to 2025-26. The indicative cost breakdown and estimated cash flow requirements by financial years are as follows –

	2020-21 \$'000	2021-22 \$'000	2022-23 \$'000	2023-24 \$'000	2024-25 \$'000	2025-26 \$'000	Total \$'000
(a) Hardware	-	4,832	6,040	6,040	6,040	4,228	27,180
(b) Software	-	2,964	24,413	56,940	168,870	97,713	350,900
(c) Cloud service	558	2,465	12,677	19,368	36,976	11,063	83,107
(d) System implementation	1,638	57,756	96,940	96,940	96,940	96,940	447,154
(e) Contract staff	20,260	25,514	25,514	25,514	25,514	25,514	147,830
(f) Training	-	552	4,550	10,612	31,474	18,212	65,400
Sub-total	22,456	94,083	170,134	215,414	365,814	253,670	1,121,571
(g) Contingency	2,246	9,408	17,013	21,541	36,582	25,367	112,157
Total	24,702	103,491	187,147	236,955	402,396	279,037	1,233,728

16. On paragraph 15(a) above, the estimate of \$27,180,000 is for procurement of computer hardware, including scanners and workstations for digitising paper records and capturing them into ERKS.

17. On paragraph 15(b) above, the estimate of \$350,900,000 is for procurement of computer and user software, including electronic recordkeeping software package and related software such as operating system, database software, rendition software and optical character recognition software.

18. On paragraph 15(c) above, the estimate of \$83,107,000 is for the Government's private cloud service required during system customisation and integration and installation.

19. On paragraph 15(d) above, the estimate of \$447,154,000 is for engagement of service providers for conducting system analysis and design, customisation and integration, testing, installation and rollout to B/Ds. The cost item also covers services for security risk assessments and audits in various implementation stages.

20. On paragraph 15(e) above, the estimate of \$147,830,000 is for hiring IT contract staff with relevant skills and experience to assist in system design, development, testing and rollout.

21. On paragraph 15(f) above, the estimate of \$65,400,000 is for training of B/Ds' users.

22. On paragraph 15(g) above, the estimate of \$112,157,000 represents a 10% contingency on the items set out in paragraphs 15(a) to (f) above.

Other Non-recurrent Expenditure

23. The proposal will entail an additional non-recurrent staff and associated operating costs of \$39,912,000 for OGCI0, \$91,905,000 for GRS and \$17,586,000 for EffO during the project period. The costs represent a total of 3 768 man-months of staff efforts for implementing the system and providing support to B/Ds. The above other non-recurrent requirements will be included and reflected in the annual estimates of OGCI0, GRS and EffO in the relevant financial years. Other B/Ds may incur additional staff costs. The requirements will be reviewed as the project progresses.

/Recurrent

Recurrent Expenditure

24. We estimate that the new IT system will incur an annual recurrent expenditure of \$2,278,000 in 2021-22, increasing to \$270,000,000 in 2027-28, covering the expenses for OGCIO to manage, operate, maintain and support the central ERKS. A breakdown is as follows –

	2021-22 \$'000	2022-23 \$'000	2023-24 \$'000	2024-25 \$'000	2025-26 \$'000	2026-27 \$'000	2027-28 onwards \$'000
(a) Hardware and software maintenance			639	5,900	18,170	54,560	75,616
(b) Government's private cloud service	2,278	9,911	31,997	93,300	172,304	192,199	192,199
(c) System maintenance			18	170	525	1,577	2,185
Total	2,278	9,911	32,654	99,370	190,999	248,336	270,000

25. The proposal will entail additional recurrent staff costs of \$3,028,000 and \$1,074,000 per annum for OGCIO and GRS respectively from 2026-27 onwards. The costs represent a total of 48 man-months per annum of staff efforts for ongoing support and maintenance of the system and providing ongoing support to B/Ds.

IMPLEMENTATION PLAN

26. Subject to funding approval of the Finance Committee (FC), we plan to implement the ERKS according to the following timeline –

	<u>Target Timing</u>
Tendering	second half of 2020
Development of ERKS	2021
Installation/Adoption of ERKS in 75 B/Ds in phases	2021 to 2025

/27.

27. We are finalising the detailed service-wide rollout plan, taking into account the experiences from the ERKS pilot programmes as well as the findings and recommendations in a recent value-for-money audit by the Audit Commission in the following areas –

- (a) strengthening the project monitoring mechanisms;
- (b) timely cessation of print-and-file practice for the filing of email records in B/Ds after introducing ERKS;
- (c) setting up a mechanism to measure B/Ds' savings in paper/printing costs upon the cessation of the print-and-file practice; and
- (d) providing timely technical support and training for B/Ds in adopting ERKS.

PUBLIC CONSULTATION

28. On 20 April 2020, we consulted the Panel on Information Technology and Broadcasting of the Legislative Council on the funding proposal. Members supported the submission of the proposal to FC for funding approval.

BACKGROUND

29. The Government promulgated the Electronic Information Management Strategy and Framework in 2011 which recommended government B/Ds to adopt ERKS. A total of 11 B/Ds listed at Enclosure 2 have piloted to develop their departmental ERKS, and three core systems of ERKS have been developed as common service platforms to further test whether the capabilities and performance of the different systems could meet B/Ds' records management requirements. Around 75 B/Ds have not yet implemented or have not fully implemented ERKS.

Encl. 2

Innovation and Technology Bureau
Office of the Government Chief Information Officer
Chief Secretary for Administration's Office
Administration Wing
Government Records Service
June 2020

Enclosure 1 to FCR(2020-21)26

Cost and Benefit Analysis for the Full Implementation of Electronic Recordkeeping System

Item	Cash flow (\$'000)									
	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	Total
1. Non-recurrent										
Expenditure	24,702	103,491	187,147	236,955	402,396	279,037	-	-	-	1,233,728
Staff cost	25,646	26,150	26,680	27,235	21,693	21,999	-	-	-	149,403
Total Non-Recurrent Cost	50,348	129,641	213,827	264,190	424,089	301,036	-	-	-	1,383,131
2. Recurrent										
Expenditure	-	2,278	9,911	32,654	99,370	190,999	248,336	270,000	270,000	1,123,548
Staff cost	-	-	-	-	-	-	4,102	4,102	4,102	12,306
Total Recurrent Cost	-	2,278	9,911	32,654	99,370	190,999	252,438	274,102	274,102	1,135,854
Total Non-Recurrent and Recurrent Cost (A)	50,348	131,919	223,738	296,844	523,459	492,035	252,438	274,102	274,102	2,518,985
3. Savings										
Realisable savings ^{Note 1}	-	6	291	1,052	4,079	8,282	9,000	9,000	9,000	40,710
Notional savings ^{Note 2}	-	161	7,303	26,384	102,348	207,803	225,808	225,808	225,808	1,021,423
Cost avoidance ^{Note 3}	-	21	938	3,388	13,144	26,688	29,000	29,000	29,000	131,179
Total Savings (B)	-	188	8,532	30,824	119,571	242,773	263,808	263,808	263,808	1,193,312
Net Savings (C) = (B) – (A)	(50,348)	(131,731)	(215,206)	(266,020)	(403,888)	(249,262)	11,370	(10,294)	(10,294)	(1,325,673)
Net Cumulative Savings	(50,348)	(182,079)	(397,285)	(663,305)	(1,067,193)	(1,316,455)	(1,305,085)	(1,315,379)	(1,325,673)	

/Notes

Notes –

1. This represents the savings in papers and printer cartridges due to the cessation of the print-and-file practice.
2. Notional manpower savings will be achieved in bureaux and departments (B/Ds) through efficiency gains in records management activities (viz. creation of filing folders, capturing of records, and search and retrieval of records). Since B/Ds' records management duties are shared by individual teams and officers, and most support staff only conduct records management on a part-time basis, the staff savings from B/Ds are fragmented.
3. This represents the avoidance of cost arising from reduced need for additional storage space for paper records.

Enclosure 2 to FCR(2020-21)26

**Bureaux and department (B/Ds) which have piloted to develop
Electronic Recordkeeping System (ERKS)^{Note}**

1.	Civil Engineering and Development Department
2.	Administration Wing
3.	Intellectual Property Department
4.	Architectural Services Department [*]
5.	Office of the Government Chief Information Officer
6.	Government Records Service
7.	Rating and Valuation Department [*]
8.	Efficiency Office
9.	Marine Department [*]
10.	Commerce and Economic Development Bureau – Communications and Creative Industries Branch
11.	Drainage Services Department

* These B/Ds have not fully implemented ERKS or the ERKS can only handle unclassified information.

^{Note} Listed according to the number of strokes of the first Chinese character of the B/D.