

## **ITEM FOR FINANCE COMMITTEE**

### **CAPITAL WORKS RESERVE FUND**

#### **HEAD 710 – COMPUTERISATION**

**Social Welfare Department**

**New Subhead “Replacement of Computerised Social Security System”**

Members are invited to approve a new commitment of \$386,139,000 for replacing the Computerised Social Security System of the Social Welfare Department.

### **PROBLEM**

The existing Computerised Social Security System (CSSS) of the Social Welfare Department (SWD) is approaching the end of its serviceable lifespan with some of its key components becoming obsolete. Its inflexible system design has also constrained SWD's ability in coping with the up-to-date operational requirement in the provision of social security services.

### **PROPOSAL**

2. The Director of Social Welfare, with the support of the Secretary for Labour and Welfare and the Government Chief Information Officer, proposes to create a new commitment of \$386,139,000 to replace the existing CSSS in a timely manner to ensure the continued smooth administration of various social security schemes.

### **JUSTIFICATION**

#### **Need to Replace the Existing CSSS**

3. Launched in 2000, the existing CSSS is a mission-critical computer system of SWD supporting the operation of social security schemes. It will reach

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the end of its serviceable lifespan of ten years by early 2011. While the existing CSSS adopted proven technology at the time of its development, a number of its design features and capabilities have now become inadequate, particularly with the advancement in information technology (IT). As there was no software tool or product in the market that could fulfil the business requirements in full, the existing CSSS was developed using a purpose-built approach on the basis of the workflow prevailing at the time of system development. The arrangement of assessment processes in fixed sequence and the usage of hard-coded rules have made the system design inflexible and difficult to adapt to subsequent changes in workflow. Moreover, under a tightly coupled architecture, past experience shows that it would be costly and time-consuming to accommodate changes to the system, as even a minor amendment in one area would affect many other areas.

4. Since its launch in 2000, both the hardware and software of the system have undergone enhancements for improvement in capacity and security, and implementation of new policy initiatives. In spite of these efforts, its inherent limitations have rendered the existing CSSS not readily adaptable to the development of and changes in the social security schemes. It has also prevented SWD from capitalising on the advancement of IT to enhance delivery of social security services to the public and improve case management by social security staff. For example, a long lead time is needed for modifications to be made to the existing system to support the implementation of new policy initiatives, such as additional payments, introduction of new types of allowances/supplements, etc. There is also inadequate support for information sharing and exchange with other government departments, and the inter-departmental data matching and checking have to be conducted retrospectively. Nor does the system have the capability to support provision of e-services to the public.

5. Furthermore, the ten-year maintenance contract of the existing CSSS will expire in early 2011. Some of the hardware and software in use by the system have already become obsolete. There is a pressing need to either upgrade or replace the system in order to maintain the smooth administration of social security schemes.

### **Proposed System**

6. In November 2006, SWD commissioned a consultant to conduct a feasibility study to identify the inadequacies of the system and to propose solutions. Having regard to the architecture of the existing CSSS, the gap between the existing CSSS and the future requirements, and the need to maintain the smooth operation of the existing CSSS during the implementation period, the consultant concluded that the existing CSSS should be replaced by a new system as even a major upgrade would not bring about any benefits in terms of cost or time and would incur more technical risks.

7. As recommended in the feasibility study, the new CSSS, with an anticipated serviceable lifespan of ten years, will be developed by using the Service-Oriented Architecture which is a design approach based on open and industry standard technology. The future CSSS will be constructed with different components and modules so that while the components and modules are integrated, they will not be tightly coupled so as to allow for independent modification and configurable workflow. This will produce a more flexible and adaptable architecture, enabling subsequent changes to be made to the new system in a more effective manner. In addition to performing the full range of functions of the existing CSSS, the new system will be equipped with the following additional functions –

- (a) e-services such as online enquiry, eligibility check, application, etc.;
- (b) scanning and management facility for documents and papers relating to applications, reviews and investigations; and
- (c) mobile computing facilities for home visits.

## **ANTICIPATED BENEFITS**

### **Intangible Benefits**

8. With the improvements stated in paragraph 7 above, the new system will bring about benefits in the administration of social security schemes in the following major aspects –

#### **(a) Operational efficiency**

##### **(i) Implementation of new policy initiatives**

With a flexible architecture based on components and modules, the efforts and time required for making modifications to the CSSS to support the implementation of new policy initiatives will be reduced. We anticipate that the future CSSS will have an average improvement of 10% to 30% in the efforts and time required for implementing new initiatives.

##### **(ii) Integrated case management**

The new CSSS will incorporate separate computer systems developed for the Support for Self-reliance Scheme Section, the Special Investigation Section and the Risk Management Section of SWD so that case information will be integrated and shared by

social security staff of different service units/offices for the purposes of investigation, assessment and authorisation of payment under various social security schemes.

(iii) Data sharing and exchange support

The new CSSS will support information sharing and exchange with other government departments through standardised mechanism on a common platform. Verification of data will be made more efficient and effective.

(iv) Document management

At present, physical copies of case documents are kept and centrally stored. Physical delivery has to be arranged for the retrieval of these documents. The new CSSS will be equipped with imaging capabilities to provide online storage and retrieval of the electronic copy of scanned documents, enabling more efficient storage, retrieval and transfer of information. Moreover, social security staff can gain concurrent access to the same piece of information stored in the system, thus improving the efficiency of workflow.

(v) Mobile computing facility

The new CSSS will provide facility for the use of wireless and mobile devices so that staff will be better supported in their field work. There will also be benefits in workplace arrangement, as wireless and mobile devices can bring about more flexibility in setting up or relocating service units/offices.

(vi) Monitoring of service

The new CSSS will be equipped with tools to support analyses and to provide alert or warning messages on anomalies. This would enhance detection and prevention of errors, frauds and abuses. There will be more effective monitoring of service quality.

(vii) Management information

The new CSSS will be designed and constructed to facilitate multi-dimensional trend and impact analysis. Management information can be more efficiently provided for statistical reports and policy reviews.

**(b) Customer services**

- (i) With the integration of the separate systems into the new CSSS and the provision of capability to store and retrieve scanned documents, the new system will provide better online support for processing applications and reviews. Social security staff will be better equipped with data and information of the cases through the system and less dependent on paper documents so that cases will be processed more efficiently to better serve the customers.
- (ii) The new CSSS will be able to support the provision of services through the Internet to improve the accessibility of social security services so as to provide convenience to customers. As a first step, self-service facility can be provided to the public for submission of applications and preliminary checking of eligibility for the social security schemes through entry of data on family and financial situation. In the longer run, the new CSSS may proceed to include e-services that would require authentication such as reporting changes and online enquiry of case information.

**Tangible Benefits**

9. We estimate that the proposed project will bring about an annual savings of \$82,081,000 from 2015-16 onwards, comprising –

**(a) Realisable savings of \$47,141,000 per annum**

These are the recurrent system maintenance costs of the existing CSSS, and staff efforts which will no longer be required when the existing CSSS is phased out. The savings will be ploughed back to cover part of the recurrent costs of the new CSSS.

**(b) Notional savings of \$34,940,000 per annum**

With the improvements brought about by the new CSSS, notional savings will be achieved mainly through the reduction in staff efforts required for various activities, such as handling of recipients' enquiries and reduced manual efforts in data matching.

**Cost and Benefit Analysis**

10. A cost and benefit analysis of the proposed project is set out at the  
Encl. Enclosure.

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## FINANCIAL IMPLICATIONS

### Non-recurrent Expenditure

11. We estimate that the implementation of the proposed project will incur a non-recurrent cost of \$386,139,000 over a period of three years from 2009-10 to 2011-12, broken down as follows –

	2009-10 \$'000	2010-11 \$'000	2011-12 \$'000	Total \$'000
(a) Hardware	16,557	52,140	839	69,536
(b) Software	11,580	37,856	413	49,849
(c) Communication network	184	2,929	2,024	5,137
(d) Implementation services	45,465	95,626	67,039	208,130
(e) Contract staff	3,960	5,940	4,950	14,850
(f) Site preparation	3,760	6,168	5,360	15,288
(g) Training	148	3,200	1,113	4,461
(h) Consumables	133	200	167	500
(i) Contingency	4,090	10,203	4,095	18,388
<b>Total</b>	<b>85,877</b>	<b>214,262</b>	<b>86,000</b>	<b>386,139</b>

12. On paragraph 11(a), the estimate of \$69,536,000 is for the acquisition of computer hardware, including computer servers, network equipment, desktop and notebook computers, and other information processing equipment.

13. On paragraph 11(b), the estimate of \$49,849,000 is for the acquisition of system software, including application tools, database and security software licences, and computer management software.

14. On paragraph 11(c), the estimate of \$5,137,000 is for the installation of communication lines connecting the data centres and various service units of SWD.

15. On paragraph 11(d), the estimate of \$208,130,000 is for the service charge for the implementation contractor to develop and implement the new system and the necessary infrastructure.

16. On paragraph 11(e), the estimate of \$14,850,000 is for the hiring of contract technical staff to provide project management services for the system development and implementation.

17. On paragraph 11(f), the estimate of \$15,288,000 is for the alteration works at sites, including trunking, cabling and installation of power sockets at the data centres and service units of SWD.

18. On paragraph 11(g), the estimate of \$4,461,000 is for the provision of staff training on application of the new system.

19. On paragraph 11(h), the estimate of \$500,000 is for the procurement of consumables such as toner cartridges, CDs, papers and backup tapes to be used during implementation for data conversion and testing.

20. On paragraph 11(i), the estimate of \$18,388,000 represents 5% contingency on the cost items set out in paragraphs 11(a)-(h).

### **Other Non-recurrent Expenditure**

21. The implementation of the project will also entail non-recurrent staff cost of \$39,706,000 for the formation of a project team for 34 months from April 2009 to January 2012, for which funds will be separately sought and earmarked in accordance with established procedures. The breakdown is as follows –

	<b>2009-10 \$'000</b>	<b>2010-11 \$'000</b>	<b>2011-12 \$'000</b>	<b>Total \$'000</b>
Staff cost	13,984	15,466	10,256	39,706

22. The staff cost estimated above represents a total of 976 man-months of social security and technical grades staff for managing the project.

## Recurrent Expenditure

23. We estimate that the recurrent expenditure for maintaining and supporting the new CSSS is \$61,860,000 per annum as from 2015-16, which will be partly met by the realisable savings of the proposed replacement of CSSS mentioned in paragraph 9(a) above. The remaining requirements (\$14,719,000 per annum) will be absorbed by SWD from within its existing resources.

24. The cost breakdown of the recurrent expenditure is set out as follows –

	<b>2011-12 \$'000</b>	<b>2012-13 \$'000</b>	<b>2013-14 \$'000</b>	<b>2014-15 \$'000</b>	<b>2015-16 onwards \$'000</b>
(a) Hardware and software maintenance	0	1,724	7,812	12,504	12,536
(b) Communication network	4,636	6,954	6,954	6,954	6,954
(c) System maintenance	13,179	24,974	24,974	24,974	24,974
(d) Accommodation	680	4,082	4,082	4,082	4,082
(e) Consumables	1,612	2,417	2,417	2,417	2,417
<b>Sub-total</b>	<b>20,107</b>	<b>40,151</b>	<b>46,239</b>	<b>50,931</b>	<b>50,963</b>
(f) Staff cost	6,957	10,897	10,897	10,897	10,897
<b>Total</b>	<b>27,064</b>	<b>51,048</b>	<b>57,136</b>	<b>61,828</b>	<b>61,860</b>

25. On paragraph 24(a), the estimated annual expenditure of \$12,536,000 is for hardware and software maintenance as well as software licence fees.

26. On paragraph 24(b), the estimated annual expenditure of \$6,954,000 is for the rental of new communication and data lines.

27. On paragraph 24(c), the estimated annual expenditure of \$24,974,000 is for contract services for the ongoing maintenance of the system applications.

28. On paragraph 24(d), the estimated annual expenditure of \$4,082,000 is for the rental of a centralised office to accommodate the system support team for the management of the system after implementation.

29. On paragraph 24(e), the estimated annual expenditure of \$2,417,000 is for the procurement of consumables such as toner cartridges, CDs, papers and backup tapes for on-going system operation after implementation.

30. On paragraph 24(f), the estimated annual expenditure of \$10,897,000 represents the staff cost for providing on-going support for system administration, business support, operation support and user training as well as overseeing the contractor for performing application maintenance of the new CSSS. This comprises 228 man-months of social security and clerical grades staff.

## **IMPLEMENTATION PLAN**

31. The new CSSS will be implemented in three phases. The first phase will cover the setting up of the infrastructure, platform and application system so as to take over the functions of the existing CSSS. In the second phase, the improved functionalities of the management information system and information exchange/sharing system will be implemented. In the third phase, the e-services functionalities will be enabled. For the assurance of data privacy and security, a Privacy Impact and Security Risk Assessment on the new CSSS will be conducted before its live run of each phase of CSSS. The planned implementation timetable is as follows –

<b>Activity</b>	<b>Target completion date</b>
(a) Tendering for the implementation of the new CSSS	July 2009
(b) Development of the new CSSS – Phase 1 (New CSSS goes live)	July 2011
(c) Development of the new CSSS – Phase 2	October 2011
(d) Development of the new CSSS – Phase 3	January 2012

32. In implementing the project, we will ensure that all data stored in the existing CSSS will be removed by means of de-magnetisation and the hard disks physically destroyed before they are disposed of. We will also ensure that these physically destroyed hard disks and other unserviceable accessories such as monitors, printers, routers and modems will be disposed of in accordance with relevant government procedures.

## PUBLIC CONSULTATION

33. We consulted the Legislative Council Panel on Welfare Services on 8 December 2008. Members in general supported the funding proposal.

## BACKGROUND

34. The existing CSSS is a mission-critical computer system of SWD supporting the operation of social security schemes, namely the Comprehensive Social Security Assistance Scheme, Social Security Allowance Scheme, Fee Assistance Scheme, Traffic Accident Victims Assistance Scheme, Criminal and Law Enforcement Injuries Compensation Scheme and Emergency Relief Fund. The total number of recipients under the social security schemes as at September 2008 was about 1.1 million. Based on the 2008-09 original estimate, the total expenditure of these schemes is estimated to be \$23.4 billion, representing 68% of SWD's annual budget.

35. The CSSS provides online support for about 2 100 SWD staff operating the social security schemes at 74 service sites of SWD. It caters for online input of data and case details, and supports the processing of applications, investigation, assessment, authorisation and issue of payments. The number of payment transactions processed and delivered through the system is over 1 million per month. The system also provides management information to facilitate service monitoring and policy analyses and reviews, and supports the implementation of changes in policy and provision of social security services.

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### Cost and Benefit Analysis for the Proposed Replacement of CSSS

	Cash flow (\$'000)													
	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	Total	
Cost														
Non-recurrent														
- Expenditure	85,877	214,262	86,000	-	-	-	-	-	-	-	-	-	-	386,139
- Staff cost	13,984	15,466	10,256	-	-	-	-	-	-	-	-	-	-	39,706
Sub-total	99,861	229,728	96,256	-	-	-	-	-	-	-	-	-	-	425,845
Recurrent														
- Expenditure	-	-	20,107	40,151	46,239	50,931	50,963	50,963	50,963	50,963	50,963	50,963	50,963	463,206
- Staff cost	-	-	6,957	10,897	10,897	10,897	10,897	10,897	10,897	10,897	10,897	10,897	10,897	105,030
Sub-total	-	-	27,064	51,048	57,136	61,828	61,860	61,860	61,860	61,860	61,860	61,860	61,860	568,236
<b>Total cost</b>	<b>99,861</b>	<b>229,728</b>	<b>123,320</b>	<b>51,048</b>	<b>57,136</b>	<b>61,828</b>	<b>61,860</b>	<b>994,081</b>						
Savings														
- Realisable savings	-	-	31,428	47,141	47,141	47,141	47,141	47,141	47,141	47,141	47,141	47,141	47,141	455,697
- Notional savings	-	-	20,311	31,696	31,696	33,859	34,940	34,940	34,940	34,940	34,940	34,940	34,940	327,202
<b>Total savings</b>	<b>-</b>	<b>-</b>	<b>51,739</b>	<b>78,837</b>	<b>78,837</b>	<b>81,000</b>	<b>82,081</b>	<b>782,899</b>						
<b>Net Shortfall (Savings)</b>	<b>99,861</b>	<b>229,728</b>	<b>71,581</b>	<b>(27,789)</b>	<b>(21,701)</b>	<b>(19,172)</b>	<b>(20,221)</b>	<b>211,182</b>						
<b>Net Cumulative Shortfall</b>	<b>99,861</b>	<b>329,589</b>	<b>401,170</b>	<b>373,381</b>	<b>351,680</b>	<b>332,508</b>	<b>312,287</b>	<b>292,066</b>	<b>271,845</b>	<b>251,624</b>	<b>231,403</b>	<b>211,182</b>		